

'It's Important to Know In Time'

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Air Conditioning & REFRIGERATION

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Inside Dope

By George F. Taubeneck

Death Takes No Holiday Too Little, Too Soon Calling the Roll Friendship

Death Takes No Holiday

This column has appeared under several titles, various guises, many forms, and in different locations in the NEWS since it was inaugurated some 15 years ago.

Its style, mood, and manner have changed as the industry has changed, and as the writer has changed.

But always, up until this moment, we have striven to keep it bright, sometimes gay, always hopeful and forward-looking.

Today we're unable to maintain this steady line of optimism. All we can do is write what we think, feel, believe, hear, know, and trust. And at this point we find ourselves still in the grip of unexpected mortality.

Too Little, Too Soon

During the last six weeks the writer has lost four close friends, all near his own age, and one extraordinarily promising younger relative. Many of you readers have suffered somewhat the same experience, no doubt; and perhaps those who have will be in a temper to bear with us while we pour out a bit of heart-blood. All others please turn the page.

If someone steals your car, that's tough right now; but some day you can replace it. If your house burns down, that's bad news, too; but eventually you can rebuild. If economic vicissitudes force you into bankruptcy, that's frightful; but you can start all over. When someone close to you dies, however, he's gone, never to return.

All of these men, whose passing was so affected us, were much too young to die. They were men of unusual promise and exceptional achievement. Their best years lay ahead of them. Their demise was sudden. They had not yet begun to realize what they could do for the nation, for their industry, for their families, or for themselves. As so many parents and relatives are saying today: "It just doesn't seem fair."

Calling the Roll

First to go was Ralph Peters, close personal and family friend for a decade and a half. On a business trip to New York he was stricken in a hotel room, and died alone and unattended the next day. Father of two, scoutmaster, a selfless servant of his profession, he gave much more than he had yet received.

Next was John Wyllie, mourned by all the industry. John's quick death was clearly a case of overwork, over-scientiousness, and overgiving. Too much work, too much worry, too much selfless giving of his time and energies made John vulnerable to a quick attack which a more rested man might easily have sailed through.

Third was John Welch, McGraw-Hill's youngest and (by hypothesis) most promising editor, whose sudden death we read about in New York on a Tuesday morning of a week. Those high spot was to be an evening in his home the coming Friday.

For the last three years John and the writer had planned a new publishing enterprise, in the establishment of which John was to join our company. Without his brains and tremendous driving force this enterprise will have to die with him.

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See Record Crowd At Winter Mart

CHICAGO—Despite the halt to re-conversion measures, the Winter Furniture Mart which runs Jan. 4 to 13 here, is expected to draw a record attendance of buyers.

Those who plan to attend are out to place orders for what may be available, but in the main they will be on hand trying to get an idea of "what the score will be" in months to come.

Philco Planning Home Freezer

PHILADELPHIA—Expansion of Philco Corp.'s activities to include the production of household freezer chests for processing and preserving frozen foods will start as soon as war conditions permit, John Ballantyne, president, announced Dec. 27 in a letter to stockholders.

"Recent estimates indicate that today approximately 3,000,000 families in the United States are using lockers in central storage depots to store frozen foods," Mr. Ballantyne pointed out. "It is our belief that at least one-quarter of this number, or 750,000 families, will want freezer chests in their own homes within the first two years after the war. As the use of frozen foods increases in later years, the market should correspondingly grow in size and importance."

Philco will produce a full line of freezer chests to meet the various needs of the public, Mr. Ballantyne indicated. They will be suited for the use of single-family homes, apartment houses, and on farms, where greater capacity is required, he stated.

Refrigeration Men In Arizona Plan Annual Conclave

PHOENIX, Ariz.—Arizona Refrigeration Association, which held its first annual convention Dec. 6 at Shrine Auditorium, Phoenix, reports the event was so successful that similar assemblies will be organized every year in the future.

Some 250 members (including jobbers, dealers, and service men), and their guests, including customers and prospects, attended to the number of 250 during the day's session of technical addresses and the evening banquet and discussion of the industry's problems. About a dozen manufacturers had direct representatives attending, and several featured instructive exhibits.

Roy L. Perry, president, reports a major result of the meeting is that now all dealers and jobbers throughout the state are sold on the idea of continuing to hold annual conventions. "It brought tradesmen into closer harmony and better mutual understanding," said Mr. Perry. "Desirable publicity was obtained, which raised the level of confidence in refrigeration men throughout the list of customers and prospects in the state's industrial centers."

Confirming the latter point, J. L. Lawson, association director, cites an instance of a prospect who had been delaying a decision on a new installation attending the meeting and signing a \$1,200 order before leaving the hall.

Association members hereafter will carry on all their trucks the A R A emblem to denote to the public their membership in this organization.

Speakers at the convention and their topics were:

Prof. Al Hanson, University of So. California, Los Angeles, "Development of Heat Exchange Equipment";

(Concluded on Page 21, Column 2)

OPA Hits Laxity Of Repair Firms On Price Lists

PHILADELPHIA—OPA has asked the Federal Court here to issue injunctions restraining 47 household equipment, electrical appliance, and radio repair firms here from doing business until they conform to the terms of Maximum Price Regulation 165.

The government agency claims that all of the companies failed to register with OPA Sept. 10, 1942, as required by law, and failed to maintain and keep price records and data which would show how they arrived at their prices.

The petitions request the court for injunctions requiring each of the defendants to register at once and prepare and file price statements.

Boulware Named To G-E Staff

BRIDGEPORT, Conn.—L. R. Boulware has been appointed to the staff of Charles E. Wilson, president of the General Electric Co.

Mr. Boulware, who resigned recently as operations vice chairman of the War Production Board, will be a consultant on marketing and merchandising. He will also succeed to the duties of N. R. Birge, G-E vice president who recently resigned.

In this capacity Mr. Boulware will be responsible for the operations of the following G-E affiliated companies: Edison General Electric Appliance Co., Inc.; Carboly Co., Inc.; G.E. X-Ray Corp.; Locke Insulator Corp.; Monowatt Electric Corp.; Trumbull Electric Mfg. Co.; and Warren Telechron Co.

Prior to joining the WPB staff Mr. Boulware had been vice president and general manager (at different times) of Carrier Corp. and Celotex Corp., and general sales manager of Easy Washing Machine Co.

Aulsebrook To Head Servel Sales Division

EVANSVILLE, Ind.—William J. Aulsebrook, formerly assistant sales manager of the Electric Refrigeration Division of Servel, Inc., here, has been promoted to sales manager of the division, announces Geo. J. Jones, Jr., vice president in charge of sales.

Mr. Aulsebrook has been with the Electric Refrigeration Division since 1935 and before that was associated with the company's Mountain Division office in Denver. He is a member of the American Society of Refrigerating Engineers and the Refrigeration Service Engineers' Society.

N.R.D.G.A. Conference In N.Y. Jan. 8-12

NEW YORK CITY—Seven general sessions covering many phases of retailers' problems will mark the National Retail Dry Goods Association's thirty-fourth annual conference during the week of Jan. 8 to 12 at the Hotel Pennsylvania here.

The seven sessions have been programmed as follows:

Tuesday morning: "Merchandising the Expanding Sales Volume"—and brief addresses on the "Outlook for Reconversion," "Government Surplus Merchandise," and "The Outlook for Appliances."

Tuesday afternoon: "Controls—Government or Business?" followed

(Concluded on Page 21, Column 2)

McCloud Named N.R.S.J.A. Secretary

DENVER—Harold S. McCloud will become executive secretary of the National Refrigeration Supply Jobbers Association Jan. 1, succeeding Fred B. Hovey, it was announced last week by H. R. McCombs, president of McCombs Refrigeration Supply Co. of this city.

Mr. McCloud is one of the pioneers of the refrigeration parts and supply jobbing field, having been manager of the refrigeration department of Williams & Co. He was one of the early presidents of the N.R.S.J.A.

"The growth of the National Refrigeration Supply Jobbers Association has been such that it now requires the full time service of its

(Concluded on Page 24, Column 1)

Puffer Becomes Norge V.P.

DETROIT—Paul H. Puffer, director of postwar planning during the past year and a half for the Norge division of Borg-Warner Corp., has been named a vice president to develop an employee and public relations program.

In announcing the appointment, Howard E. Blood, president, said, "Under the present stress of war conditions and the approaching problems of reconversion and gradual adjustment to peace conditions, much confusion may result. It is an obligation of any company to keep the consumer, its distribution agents, and its employees completely informed on all matters of policy, production, and employment. For this reason, Mr. Puffer was appointed to create such a program and coordinate our activities along this line."

Mr. Puffer has been with Norge for the last 11 years and in this time has served in a number of important executive capacities. Prior to the war, he was general sales manager, and after Pearl Harbor acted as contact man with Washington during conversion to war work.

Independents Only To Sell 'Monitor' Appliance Lines

NEW YORK CITY—At a meeting of the board of directors of the new Monitor Equipment Corp., a national policy of selling its line of 20 to 30 Monitor mechanical and metal appliances, including refrigerators, ranges, washers, radios, freezers, coolers, etc., exclusively to independent dealers was adopted.

Among the distributor-directors present were L. H. Bennett, San Francisco; R. L. Hughes, James & Co., St. Louis; H. G. Bogart, Toledo; Col. W. S. Westover, New York; Oliver Wolf, New York; George Patterson, St. Petersburg, Fla.; W. J. Heggie, S. S. Fretz Co., Philadelphia; G. C. Wasson, Beckett Electric Co., Dallas; Phil H. Harrison, Newark; Rex Cole, New York; and B. F. Keith, Oklahoma.

The product proposals of 42 manufacturers were considered.

T. K. Quinn announced his resignation as Director-General of the War

(Concluded on Page 4, Column 3)

Kelvinator Leases Space In Buffalo

BUFFALO—Kelvinator division of Nash-Kelvinator Corp. has leased 15,000 square feet of floor space at 877-879 Main St. here to house Buffalo zone headquarters and the refrigerator supply department, Rolland H. Davison, zone manager, announced.

Hopes Dim For Much Civilian Goods In '45

Electric Range Increase May Stick, However

WASHINGTON, D. C.—The grim news from the European battlefronts will serve to make the WPB "freeze" on civilian production even tighter, observers here predicted last week. It was pointed out that there is no "termination date" on the "freeze" order.

The one bright spot in the picture for electrical appliances was the announcement that production of 35,000 domestic electric ranges per quarter has been approved for 1945. This projected total of 140,000 units for 1945 compares with 88,000 in 1944, but is in line with the 35,000 per quarter rate of the last quarter of 1944. (See story on page 11.)

What the "freeze" of civilian production means is this:

There will be no production of civilian goods beyond the level of the fourth quarter of 1944.

There will be no revocation nor relaxation in "L" or "M" orders, except for certain cases to meet essential civilian needs.

The only hope for an increase in civilian goods production in 1945 would seem to rest in a bettering of the situation on the battlefronts, or at least a marked improvement in war production schedules. There has been some opinion that war production may be back on schedule again within three months time, in which case there may be some opportunities for civilian production.

Price of 1945 Ranges Won't Be Increased

WASHINGTON, D. C.—Ceiling prices for household electric ranges will remain generally unchanged when programmed production increases get under way in 1945, OPA officials told industry members at a recent meeting in Washington, D. C.

Industry members at the meeting consisted of a standing sub-committee of the Domestic Cooking and Heating Stove Manufacturers' Industry Advisory Committee. The sub-committee members asked for a formula method for pricing their products when the industry as a whole resumes production for the civilian market.

OPA told them that it would seek to hold to the presently established ceiling price levels and that if this was not possible in all cases then the necessary adjustments would be worked out as the need arose.

Inventory Situation Poor on Ranges, Stoves

WASHINGTON, D. C.—Dealer inventories of most types of rationed stoves have declined substantially since rationing began, Max McCullough, OPA Deputy Administrator for Rationing, said last week in releasing figures on estimated stove inventories in dealers' and distributors' stocks.

Nation-wide rationing of all types of coal, wood, oil, and gas cooking and heating stoves began on Aug. 24, 1943. After a little more than a year—Oct. 16, 1944—coal and wood stoves were released from consumer rationing because of improved supply conditions and the better distribution that had been achieved through the rationing system. All

(Concluded on Page 4, Column 4)

'Term Loans' Available To Small Business

NEW YORK CITY—Members of the Time Payment Financing Committee of the National Electrical Wholesalers Association in a recent meeting here heard William Shepherdson of the American Bankers Association and A. S. Goldman of Architectural Forum outline new programs to aid small business.

Mr. Shepherdson described the "term loan" program developed by bankers to assist smaller firms and also outlined the small business lending program now operated by the American Bankers Association.

Inclusion of "kitchen and laundry equipment" in home mortgage financing, a proposal made by Architectural Forum, was discussed by Mr. Goldman, who also emphasized that the "GI Bill" means much to the home market, especially appliances.

He also advised dealers to start cultivating their local lending institutions who will furnish the actual mortgage money for GI's and civilians for home financing.

Members of this N.E.W.A. committee include H. S. Schiele, chairman, representing the Artophone Corp., St. Louis; H. E. Blair of American Distributors, Inc., New Haven, Conn.; R. B. Cohen of the Roycraft Co., Minneapolis; H. W. Goldstein of Anchor Distributing Co., Pittsburgh; E. M. O'Donnell of O'Donnell Co., Syracuse, N. Y.; C. R. Oliver of Westinghouse Electric Supply Co., New York City, and E. W. Shepard, Graybar Electric Co., Inc., New York City.

San Diego Dealers Hit Trend To Cooperatives

SAN DIEGO, Calif. — Capacity crowd of more than 225 turned out for the twelfth annual meeting of the San Diego Bureau of Radio and Electrical Appliances held here recently.

Members of the bureau were especially interested in the impromptu "off-the-record" remarks on postwar appliance plans made by many of the 30 representatives from manufacturers who attended, according to J. Clark Chamberlain, secretary-manager of the association.

In a discussion of activities of the postwar planning committee, which at the spring meeting presented a lengthy report, Mr. Chamberlain stressed "trade diversion evils" as a subject requiring immediate consideration by manufacturers.

Tracing the rapid growth of consumer cooperatives nationally and in this territory, Mr. Chamberlain warned that sales of appliances through cooperatives and industrial concerns offer a strong threat to both dealers and distributors.

Other speakers included A. E. Holloway, vice president of the San Diego Gas & Electric Co.; O. G. Thompson, chairman of the bureau's newly established advertising and promotion committee; Frank J. Guasti, bureau vice president and chairman of the postwar planning committee; James Carothers of Hage's, Ltd.; E. W. Meise of the utility; and Hance H. Cleland and Frederick Sykes, both of the local Chamber of Commerce.

Cannon & Duggan Form New Charleston Firm To Distribute Appliances

CHARLESTON, S. C.—Norman L. Cannon, wholesale representative for Graybar Electric Co., and F. F. Duggan, who is resigning as manager of refrigeration sales for Edison General Electric Appliance Co. (Hotpoint), have established the C. & D. Distributing Co. here to distribute appliances throughout South Carolina.

The firm will handle a number of national appliance lines including Gibson refrigerators, home freezers, and electric ranges, Stromberg-Carlson radios, ABC home laundry equipment, and Sunbeam's line of small appliances. Additional appliance lines will also be carried.

Mr. Cannon is widely known in the Southeast. He previously was in the sales department of the South Carolina Power Co., and he also owns the General Marine Supply Co. of Charleston.

Before Mr. Duggan was placed in charge of Hotpoint refrigeration sales, he was successively Hotpoint's Carolina representative, branch manager for the Carolinas, and refrigeration specialist for the Southeast.

Plans for the new firm include intensive sales training programs for dealers to prepare them for the postwar market. The company will maintain a model display floor and showroom in Charleston and after the war will operate traveling sales trailers to assist dealers.

A Key To 'Electrical Living in 194x'



A wiring display which carries out the story, "Electrical Living in 194X," recently was placed on exhibition at Omaha by the Nebraska Power Co. to emphasize the necessity of adequately planned wiring in the postwar homes of tomorrow.

It consists of three front and two end panels; atop the center section is a scale model of a modern five-room house, which is well lighted and calls attention to the display. Below, on the center panel, is a blowup of the electrical home of 194X. On the plan is shown the wiring diagram for the whole house as well as an explanation of why certain circuits, outlets, and switches are used in each room.

The left front panel has centered in it a recessed cross section of a modern six-room home built to scale. This home is completely furnished to the last detail. Both appliances and furniture are built to scale. A sign above this cut-away says "everybody's going all electric in 194X." An inverted horn of plenty is dumping postwar appliances through the roof into the house.

In the basement on the right is the heating and air conditioning unit, the Westinghouse Precipitron, and the home freeze cabinet. On the left is a modern laundry complete with water heater, laundromat, dryer, ironer, work surfaces, and cabinets. Lighting for the basement is controlled by a master switch on the side of the panel, lighting, a clock, and a ventilating fan.

The kitchen houses a range, refrigerator, dishwasher, sink, work surfaces, and cabinets with fluorescent

Even the tiny floor and table lamp light up in the living room. A tiny radio-television set has an illuminated screen with a scene on it. Lighting for these appliances, too, are controlled by switches which can be turned on and off by any one inspecting the display.

The bedroom is well lighted even to fluorescent lamps on either side of the vanity mirror; the bathroom includes a sunlamp, an infra red heater, and is well lighted; even the attic has a built-in exhaust fan that runs.

The right hand front panel demonstrates the effect of overloaded circuits and low voltage. Inadequate wiring is demonstrated by a pair of lamps that burn dimly, a motor that does not come up to full speed, and by a range element that glows dimly. Adequate wiring shows lights that burn brightly, a motor that reaches speed quickly, and a range element that instantly reaches a fiery red.

Installed on one of the end panels are the following wiring devices with an explanation of each: service head, flush meter socket and meter, circuit breaker, switch with night light, switch with pilot light, wall switch, duplex split outlet, radio outlet, clock hanger outlet, door switch, door bell transformer, range outlet.

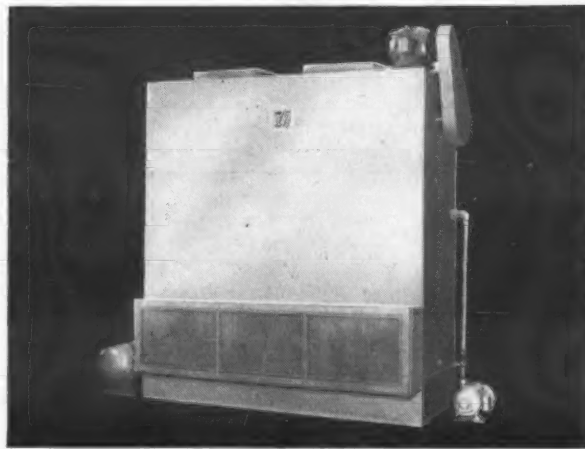
The entire display uses Reddy Kilowatt and cuts of modern electrical appliances to good advantage. The fact that the lights and appliances can be operated by any one passing by makes it a display which attracts a good deal of attention and does a good job of telling the story.

PEERLESS
of **AMERICA** Inc.
MARION INDIANA

Refrigeration and Air Conditioning Heat Exchange Equipment
THE FINEST MADE!

d-h WAT-R-MISER

evaporative condenser with built-in air filter



You'll save fully 90% of ordinary evaporative condenser service expense with Wat-R-Miser... and get maximum performance too. Built-in all-metal air filter... removable, washable and rust-proof assures clean air in the system. Pitched tube condensing coils eliminate "bottling up" of gas and liquid... keeps all of the condensing surface working all of the time. These outstanding features, plus sturdy construction, combine to give you maximum efficiency, economy and dependability for which Wat-R-Misers are famous.

They are made in 16 sizes... capacities from five to 120 tons, and designed for use with all refrigerants. Enthusiastic users with the most exacting requirements say Wat-R-Miser gives peak performance at minimum cost.

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IMPORTANT ADVANTAGES

- 1 Eliminates CLOGGED SPRAY NOZZLES
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- 3 Eliminates EXCESSIVE HEAD PRESSURE
- 4 Eliminates DIRT & ALGAE FORMATIONS

Only WAT-R-MISER gives you so much for so little
Built-in air filter • Pitched tube, all prime surface coils
Self-aligning ball bearings
Electrically welded framework • Ball bearing motors
Efficient, quiet fans • Specially design'd spray nozzles

Tech

Another answer to "What's ahead for Kelvinator Retailers?"

A GREAT NEW RADIO SHOW

STARRING "THE ANDREWS SISTERS" AND

GUEST STARS OF STAGE • SCREEN AND RADIO

Now—to the great selling power of Kelvinator's national magazine campaign, Nash-Kelvinator adds the tremendous impact of radio—with a brilliant, new, half-hour musical comedy program broadcast every Sunday over the complete Blue Network of 189 stations, coast to coast.

Featuring the famous "Andrews Sisters," America's top singing trio . . . George (Gabby) Hayes, famous Western movie comedy star of Republic Pictures . . . Vic Schoen and his Decca Recording Orchestra . . . this newest radio show will have as guest stars each week the most famous names of the radio, stage, screen and musical worlds.

And its tremendous audience appeal will win increasingly greater consumer acceptance for the products Kelvinator Retailers will sell when the "green light" for production is given.

This is but one of the dramatic, retail-minded selling programs that will help build sales and profits for Kelvinator Retailers. It is another reason why, postwar, retailers with the Kelvinator Franchise will hold "the most valuable franchise in the Appliance Industry."



Tune in Every Sunday

4:30-5:00 P.M., EWT

for the new

NASH-KELVINATOR

RADIO SHOW

**Over the Entire
Blue Network**

**FOR APPLIANCE
DISPLAY**



Coming soon—a new book of modern store and appliance department layouts to help Kelvinator Retailers plan for greater sales through better display.

Look Ahead With



KELVINATOR

DIVISION OF NASH-KELVINATOR CORPORATION
Kenosha • Milwaukee • DETROIT • Grand Rapids • Lansing

King, Sagar Named G. C. Engineers

GLENDALE, Calif. — Appointment of James King as field sales engineer in the New York factory branch and Paul B. Sagar as eastern field engineer in the Cleveland factory branch has been announced by General Controls Co. here.

Mr. King has been active for many years in the valve industry, representing Jenkins valves in New York and New Jersey and serving as Jenkins' Texas manager. Recently he handled industrial oil sales for Pure Oil Co. in New York.

Mr. Sagar will concentrate on assisting eastern appliance manufacturers in application problems and helping them in test procedures at the American Gas Association laboratory. A graduate mechanical engineer of Oregon State University, Mr. Sagar was with Iron Fireman.



HAROLD D. CONKLIN
His recent appointment to head Admiral's range division indicates the firm's energetic plans.

'Monitor' Members Map Sales Policy

(Concluded from Page 1, Column 4)
Production Drive, and was elected president of Monitor Equipment Corp. Mr. Quinn is a former vice president of General Electric Co. and head of his own company of merchandising and advertising counselors.

The directors approved the selection as first choice new distributor-members of Hamlin & Mason, Inc., Buffalo; Associated Wholesale Electric Co., Los Angeles; B. W. Kirby Sales & Service Co., Columbia, S. C.; Birch & Vogel, Inc., Ashland, Ky.; Dauphin Electric Supplies Co., Harrisburg, Pa.; The Kormeyer Co., Lincoln, Neb.; Sterling Products Co., Minneapolis; Eoff Electric Co., Portland, Ore.; Robson Electric Co., Sioux Falls, S. D.; J. A. Walsh, Inc., Houston, Tex.; Southern Equipment Co., San Antonio, Tex.; Bauman Electric Co., El Paso, Tex.; Electroplance Distributors, Inc., Milwaukee.

When contracts are officially signed these distributors automatically become joint, member owners, and directors of Monitor.

Distributor members secure their exclusive territories in perpetuity; contracts can only be cancelled for cause by majority vote of all distributor-dealers, it was stated.

A national advertising campaign covering the full line of Monitor home appliances and equipment was projected beginning late this spring or summer, depending upon war developments.

Inventories of Gas, Oil, and Wood Stoves and Ranges at a Low Point

(Concluded from Page 1, Column 5)
oil and gas cooking and heating stoves, however, remain on the rationed list.

"Only one rationed type—oil cooking stoves—has shown any considerable inventory improvement," Mr. McCullough said, adding that the gain of 29,000 stoves of this type from October, 1943, to November, 1944, is, however, only a 'drop in the bucket' in view of the fact that stocks of oil cooking stoves have been critically low since before rationing started and demand is still far ahead of wartime production.

Over-all stocks of oil heating stoves have shown a steady downward trend, with only slight improvement during the summer months. Commenting on the general stock picture here, Mr. McCullough said:

"Although the heating season had just begun, inventories of oil heating stoves as of Oct. 1 totaled only 103,000 compared with 181,000 a year ago in October. A further drop to 75,000 was registered by Nov. 1. This represents the greatest inventory loss of any of the rationed types.

"Against this total dealer stock, 78,684 purchase certificates for oil heaters were issued to consumers during the month of October. Even though demand normally falls off through November and later months, stocks will probably decline so sharply that in many localities very few oil heaters will be available in the stores."

It was further explained that shortages of labor for cutting firewood have caused many people who have been using wood burning stoves to apply to their local War Price and Rationing Boards for oil heaters.

"Unfortunately, neither the stocks of oil heating stoves nor supplies of kerosene and fuel oil are large enough to provide oil heaters for these people," Mr. McCullough said. "The stove panel members of the ration boards have to apportion what few stoves we have to the people who need them most. Consequently, the eligibility requirements must remain high.

"One of the most difficult problems in determining how many certificates can be issued each month throughout the country is the necessity of reserving even a small supply for the people whose needs will develop suddenly during the winter. It would cause great hardship if we permitted all available stoves to be bought in the fall and early winter months. For example, people who moved and had no stove, or those whose old oil heaters burned out, would not be able to get a new one even though an oil heater might be the only kind of stove they could use."

Commenting on inventories of gas cooking stoves, Mr. McCullough said that a stock decline of 26,000 had occurred from October, 1943, to October, 1944.

"Usually," he said, "the seasonal demand for gas cooking stoves reaches its peak in the spring months. However, this year the number of persons applying to ration boards for gas cooking stoves continued to increase through the month of October, when 77,615 certificates were issued."

The following table lists the number of certificates issued to consumers during the year ending Sept. 30, 1944, and the estimated rationed stove inventories in the hands of the trade Nov. 1, 1944, and at six-month intervals:

Types of Stoves	Certificates issued during year ending Sept. 30, 1944	Oct. 1, 1943	Trade Inventories — (dealer and distributor stocks) —		
			April 1, 1944	Oct. 1, 1944	Nov. 1, 1944
Heating Stoves					
Coal-Wood*	843,075	507,000	423,000	487,000	—
Oil	316,239	181,000	100,000	103,000	75,000
Gas	571,404	215,000	143,000	228,000	131,000
Cooking Stoves					
Coal-Wood*	411,951	71,000	98,000	128,000	—
Oil	532,306	55,000	86,000	79,000	84,000
Gas	618,570	101,000	80,000	75,000	74,000

*Removed from consumer rationing Oct. 16, 1944.

Service Engineers Should Know ...

"VIRGINIA" METHYL CHLORIDE IS REALLY LABORATORY TESTED

— the content of each and every container — large or small — is analyzed 3 separate times.



BOILING POINT TEST

1. A measured sample from each cylinder must be water-white in color and when boiled to dryness must record within 25 100 of 1 degree a constant boiling point of minus 23.8°C. This test detects unwanted hydrocarbons, dirt and oil impurities.



ACIDITY TEST

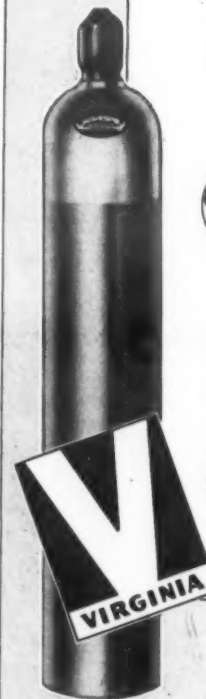
2. The acid content in a sample of known weight must not exceed 6 parts per million; low acidity prevents copper plating and oil sludging.



MOISTURE TEST

3. The moisture in a sample of known weight must not exceed 80 parts per million; — low moisture prevents freezing at expansion valve and refrigerant break-down.

The name "V-METH-L" on the cylinder is your guarantee of quality. Sold by refrigeration supply jobbers everywhere.



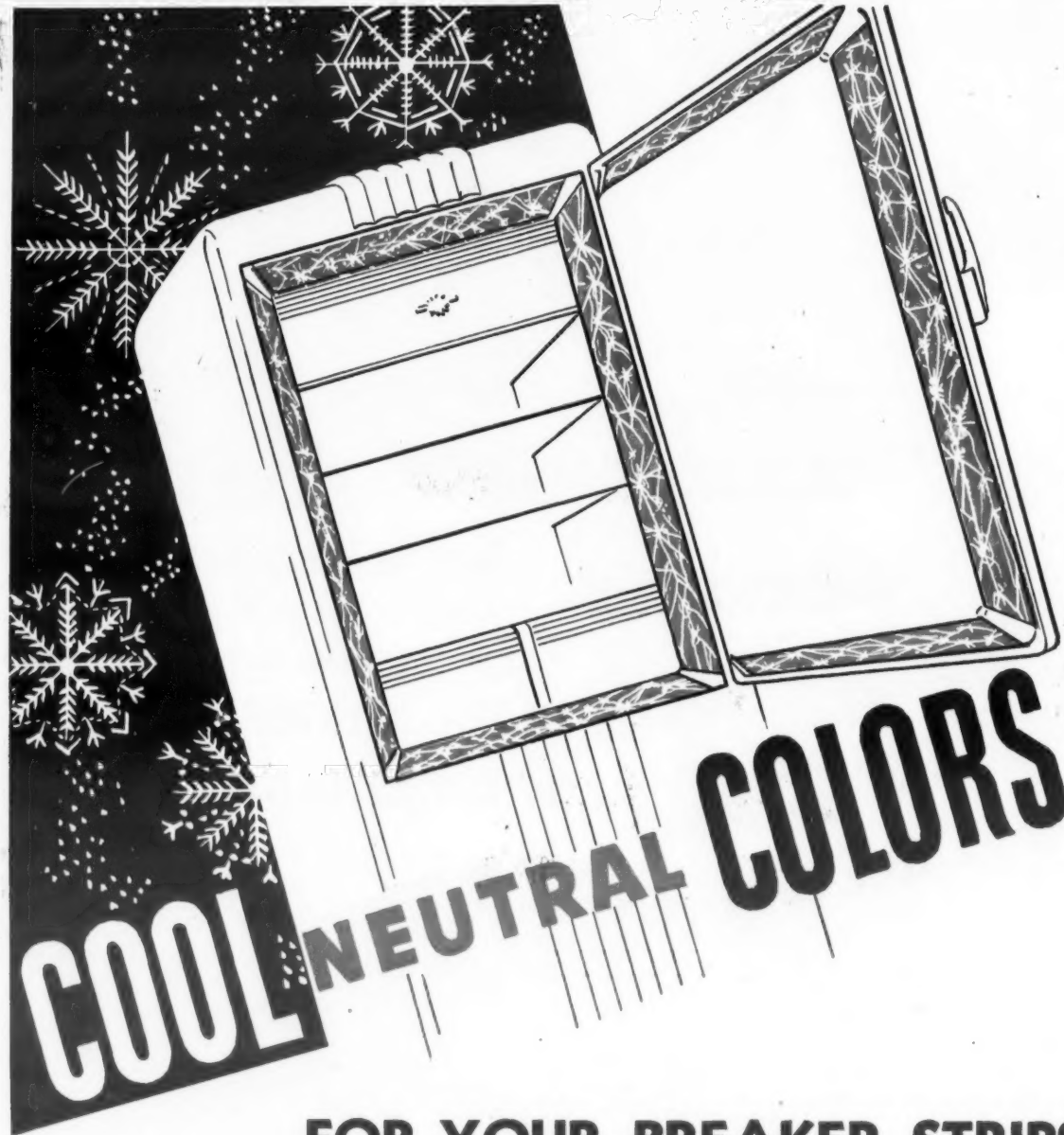
**VIRGINIA
Smelting Co.**

WEST NORFOLK, VA.

76 BEAVER ST., NEW YORK 5 — 131 STATE ST., BOSTON 4
Agents for Kinetic's "Freon-12" — "Freon-22" — "Freon-11"

WALK-IN COOLERS AVAILABLE FOR PROMPT DELIVERY WITH OR WITHOUT CONDENSING UNITS (PRIORITY REQUIRED)

FOGEL REFRIGERATOR COMPANY Since 1899
5400 Eadom St., Philadelphia 37, Pa.



FOR YOUR BREAKER STRIPS!

Formica breaker strips and door backs for refrigerators are appropriately available in cool colors, that harmonize with the function of the box.

These cool colors may also be neutral colors that will fit in well with the color scheme of any kitchen.

This colorful appropriateness will make your product much more desirable to those decoration-wise women, who have so much influence over the other women of the community.

These sparkling new Formica breaker strips have every practical advantage of the black strip: a smooth easily cleaned surface, the ability to stand rigorous cleaning day after day without injury, and resistance to staining by sweating and condensation. They provide also an efficient thermal break.

Installed exactly as your present breaker strips. You can have them on your first new model.



FORMICA

THE FORMICA INSULATION COMPANY

4610 SPRING GROVE AVENUE

CINCINNATI 32, OHIO

Bldg. Supply Firm Plans 8 Appliance Branches

WASHINGTON, D. C.—Eight retail stores concentrating on sales of electrical appliances will be opened in Washington and its suburbs as soon as possible by the Hudson Supply & Equipment Co., one of the oldest and largest building supply firms here, it was announced by Don Dougherty, appliance division manager.

The firm will not wait for the supply of appliances to return to normal, but will start as soon as suitable locations can be found, augmenting short appliance lines with other traffic items, perhaps housewares and toys, it was indicated. Complete appliance lines covering all price ranges are to be sold, including radios and home and farm freezers.

Two reconditioning plants for repairing of all traded-in appliances will also be operated by the firm, which will probably devote one or two of its stores to the sale of reconditioned merchandise exclusively. All service work on the appliances sold will be handled by the Hudson firm, Mr. Dougherty said.

Plans call for one large store in downtown Washington and suburban outlets in Clarendon, Silver Spring, Hyattsville, Anacost, and Alexandria, Va. The stores will serve as display rooms, all deliveries being made from warehouses.

Louis Lady Now Appliance Buyer for Jones Store

KANSAS CITY, Mo.—Louis B. Lady, active in the appliance field since 1924, has been appointed buyer for the appliance department of the Jones store here.

Mr. Lady has been a territory manager for Westinghouse Electric & Mfg. Co., a district representative and Kansas City sales manager for Frigidaire Division, and buyer and department manager at Karlan's of Topeka, Kan. He comes to Jones from North American Aviation Corp.

CORDLEY
THE BATTLE PROVEN
Electric
WATER COOLERS

THE PROVING GROUNDS OF WAR offer dramatic confirmation of the ability of Cordley Electric Water Coolers to withstand hard knocks. Supplied since 1942 for shipboard use to the Navy (Contract NMs 9982) and to the Maritime Commission. These same Battle-Proven Coolers are now available for essential uses on land. Write for facts.

CORDLEY & HAYES
452 Fourth Ave., New York 16
Manufacturers of Water Coolers For 55 Years

MASTERCRAFT
ADJUSTABLE
REFRIGERATOR PAD

NATIONALLY ENDORSED

is adjustable to all makes and sizes of refrigerator cabinets; thoroughly protects finish of cabinet from scratches and scuffs during moving; easily and quickly put on or off; sturdy, lasting construction; easily pays for itself in a short time. Price \$11.75 each.

Attractive lettering of your name on pad \$2.00 each extra.

For carrying your refrigerator more safely and easily, use the Mastercraft Adjustable Carrying Harness which is a separate unit from the pad and priced \$8.50 each.

Write for complete folder and prices on pads for refrigerators, washers, ironers, ranges, radios; also furniture pads and protective covers. . . . All prices subject change without notice.

BEARSE MANUFACTURING CO.
Incorporated 1921
15-3825 Cortland St., Chicago 47, Illinois

Thiele & Winslow Form Texas Distributorship

SAN ANTONIO, Tex.—Joe W. Thiele, for nine years vice president in charge of refrigerators and major appliances for Straus-Frank Co., distributors here, has resigned to form a partnership with Frank D. Winslow under the firm name of Thiele-Winslow Co., here.

Mr. Winslow was, previous to the organization of the new firm, southwest manager for Jones & Laughlin Steel Corp.

Names of the lines for which this firm will serve as distributors have not yet been announced.

Westinghouse Names Gross Eastern Stores Manager

NEW YORK CITY—Appointment of J. C. Gross as eastern district stores manager, with offices in New York City, has been announced by H. B. Tompkins, eastern district manager of the Westinghouse Electric Supply Co.

F. B. Connelly Co. Starts New Appliance Firm

SEATTLE—The F. B. Connelly Co. of Seattle, announces the formation of a new company which will be known as the F. B. Connelly Co. of Oregon.

Offices, display rooms, and warehouse will be located in the Rudie Wilhelm Building, 1233 N.W. 12th St., Portland, and Wm. L. Bowden as vice president and manager.

The F. B. Connelly Co. of Oregon will be distributor for such products as Norge refrigerators, ranges, washers and oil heaters, Majestic radios, National water heaters, Meal-master Ranges, as well as a general line of table appliances, toys, giftwares, etc.

Wm. L. Bowden had been eight years with Frigidaire and nine years as manager of the H. A. West Co. of Portland. He has left his position with the War Production Board where he has been District Salvage Chief during the past two years.

Aluminum Kitchen Furniture Coming

NEW YORK CITY—Kitchen furniture made of aluminum is a sure thing for postwar, according to an announcement by D. E. Stratton, manager of the New York office of Aluminum Cooking Utensil Co., a subsidiary of Aluminum Co. of America.

Since the company is fully engaged in war work, the furniture will have to wait until the war ends, he indicated. Before March, 1941, the company produced food processing equipment for both industrial and home use.

American Coils Appoints West Coast Representative

LOS ANGELES—The Mac Silver Co. here has been named exclusive Pacific coast representative for American Coils Co. of Newark, N. J., and will also handle the line in Utah, Colorado, New Mexico, Arizona, and the southern part of Nevada.

Joins Ben-Hur



C. W. STONER
Recently named chief refrigeration engineer for the Ben-Hur Mfg. Co., Milwaukee manufacturer of home and farm freezers.

Performance Proved

...5,000 TIMES... FOR YOUR POSTWAR PROFIT!

Hamilton AUTOMATIC CLOTHES DRYER

(BOTH GAS AND ELECTRIC MODELS)



B. H. Spinney

• Sold before war stopped production, over 5,000 Hamilton Automatic Clothes Dryers are now brilliantly proving their time-and-work-saving worth . . . in homes and apartments from coast to coast. Distributors and dealers . . . as well as owners . . . are enthusiastic. Every sale stays sold. No service headaches, for the Hamilton Dryer is simplicity itself, having only three simple moving parts.

Typical of comments received from distributors

is this one from Mr. B. H. Spinney, President, B. H. Spinney Co., Springfield, Mass. "You have an excellent specialty item in this Clothes Dryer . . . a gold mine of postwar sales and profits possibilities for both distributor and dealer."

The Hamilton Automatic Clothes Dryer has been thoroughly tested by 18 utilities in our territory, and I am glad to say that it bears their valued okay."

EVERY WASHER BUYER A POTENTIAL PROSPECT

Postwar sales opportunities are practically unlimited. Surveys show that one in every four housewives wants an Automatic Clothes Dryer.

The reasons are easy to see. An entire washer load of clothes is damp-dried (ready to iron) in only 15 to 25 minutes. No more worry about rain, humidity, snow, soot . . . the whims of the elements.

Every washer you sell will be a natural opening to sell a Hamilton Automatic Clothes Dryer. Two unit sales instead of one! Furthermore, this new appliance will involve no trade-ins. A clean deal for clean profits!

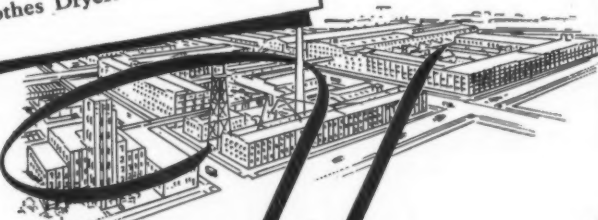
The Hamilton Automatic Clothes Dryer is approved by Underwriters' Laboratory and the American Gas Association. For further facts about this postwar money-maker, drop us a line today.

JANUARY APPLIANCE SHOW

We cordially invite you to visit us at the Housewares and Major Appliance Show . . .

4th Floor
PALMER HOUSE, CHICAGO
January 7-12, Inc.

...and get full particulars concerning this sensational Hamilton Automatic Clothes Dryer.



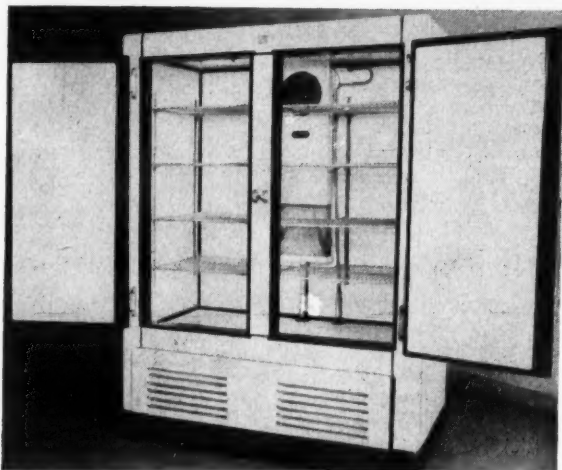
Hamilton MANUFACTURING CO.

WORLD'S LARGEST MANUFACTURERS OF EQUIPMENT FOR THE PROFESSIONS

TWO RIVERS • WISCONSIN

Rogers REACH-INS

Now available! Get your order in today!



Model Illustrated - 30 Cubic Feet

Other Models from 17 to 72 cubic feet

PORCELAIN INSIDE AND OUT

Equipped with 1/3 H. P. Universal Compressor

Send for Folder No. 4

MODERN APPLIANCE CO.

1355 MARKET ST., SAN FRANCISCO 3, CALIFORNIA

Those attending Market Week (S.F.) Feb. 5th to 10th
See our display at the Merchandise Mart

Lower Time Payment Rates Are Predicted

NEW YORK CITY—Lowest instalment buying rates in its history will be offered the public by Universal C.I.T. Credit Corp. when production of durable goods starts in a move to lower the costs of distribution and promote increased consumption and employment, reveals Arthur O. Dietz, president.

Lower costs of distribution, together with employment, are the problems the nation must solve to maintain its postwar economy at a high level, and here the credit extending agencies—finance companies and others—must help, Mr. Dietz said in a talk before a recent dinner meeting of the Security Analysts Association.

Citing an estimated annual demand of \$7 billion for a group of durable goods comprising automobiles, refrigerators, washing machines, radios, and air conditioning equipment, Mr. Dietz declared that a large proportion will be purchased on the instalment plan.

At least 50% of the annual postwar demand for motor cars, estimated in excess of \$5 billion, will be purchased on the instalment plan, and the percentage of the others listed will range from 65 to 85%, he predicted.

In addition to cutting costs of distribution, lowered instalment rates will probably induce consumers to resort to the credit market to purchase durable goods instead of dipping into savings accumulated during the war, he added.

What's Cookin' at the Furniture Mart?



Scenes like this one will probably be quite welcome to visitors of the winter furniture market scheduled for Jan. 4 to 13 in the American Furniture Mart in Chicago. June Austin is tasting the results of "cooking on the front burner" of a new Norge gas range.

Dealer 'Takes In Washing' To Promote Postwar Business

BIRMINGHAM, Ala.—The Birmingham Electric Battery Co., Norge and Bendix distributors, has more dealers now than it had back before the war when merchandise was plentiful according to Ed Henley, president. A series of dealer meetings are now being held in Montgomery, Mobile, and Birmingham to acquaint dealers with the concerns' plans for after-war sale and service of appliances.

Mr. Henley said a number of new dealers have been added in recent months including furniture dealers, hardware stores, and specialty and service shops, also a few drug stores. He expects the furniture dealer to play an increasingly large part in the after-war merchandising of appliances on a time payment basis.

Dealers will be expected, Mr. Henley said, to put in a segregated display of appliances, showing the whole line and not just one or two favored appliances. He added that at least three of his Bendix dealers had kept home laundry displays on hand all during the war, and that one of them, Curtis West, operator of a specialty shop at Headland, Ala., had "taken in washing" from customers.

About 4,000 to 5,000 washing jobs have been done to date at a charge of 45 cents for each Bendix washing load.

At the same time this dealer has taken the names of prospects for laundry equipment after the war and now has quite a list of them. One of his requirements for handling washing jobs was that the customer remain and see the machine handle at least one lot of clothing.

Automotive Parts Firm Takes Appliance Line

ROCHESTER, N. Y.—M. J. Fitzsimmons Mfg. Co., which was organized about 15 years ago to distribute automotive accessories, has been appointed distributor in the area for all products of Admir Corp., announces Ross D. Siragusa, president.

Since 1939 Mitchell Morrison and Roscoe L. Taylor have owned the firm, which was established by Martin J. Fitzsimmons.

Lindsay Morrison is general manager of the appliance division, which is operated separately. At one time Mr. Morrison was district representative of General Electric for the state of New York. He joined the War Production Board in December, 1941, and headed the division handling domestic mechanical refrigeration.

heart trouble — (in appliances) Any failure of the electric motor which inconveniences and aggravates the owner.



There's no "heart trouble" in that appliance—it has an EMERSON-ELECTRIC MOTOR

Of course, no woman is going to take along a stethoscope when she buys a motor-driven electric appliance. But this much is true—what the heart is to the human body, the motor is to the appliance. It's just smart buying and good common sense to make sure you get a strong, reliable motor—a motor that is precision-built to give QUIET, uninterrupted operation.

If the motor in your appliance is an Emerson-Electric, you can be sure it will give you long, faithful service. Because Emerson-Electric Motors are made by the same people who make the famous Emerson-Electric Fans—many of which have been in operation 25 years and longer!

So, when you buy these new home appliances, ask "Do they have Emerson-Electric Motors?"

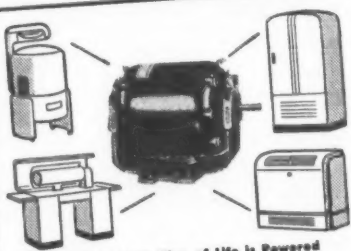
Are you going to modernize or build a new home? Write today for complete information on Emerson-Electric Kitchen Ventilating Fans and Home Center Fans.

THE EMERSON ELECTRIC MANUFACTURING CO.

ST. LOUIS 3, MISSOURI

Branches: New York • Chicago • Detroit • Los Angeles • Denver

EMERSON ELECTRIC
MOTORS • FANS



The American Way of Life is Powered with Electric Motors

For more than 54 years Emerson-Electric Motors have been providing dependable power for many of America's best-known appliances, and helped to build the reputation of their makers.

One of a series of advertisements appearing in National Magazines

If your future plans include the manufacture of motor-driven appliances it will pay you to investigate Emerson-Electric Motors—made to give long, faithful service without "heart trouble."

Fahrenheit

Cools Air-Warm Bottles

in 10 minutes to 45°

in 15 minutes to 35°

Lead Crystal handblown
9" x 1" cork jacket handturned

\$22.00

(West of Denver \$22.50)

Retail (Fairtraded)

U. S. PATENTS 2,075,931; 2,163,968

Trademark Registered U. S. Patent Office.

Mr. Dealer:

Wherever you sold a refrigerator you can sell a Fahrenheit.

Women love it's beauty,
Men its utility.



Immediate Delivery

Dr. Peter Schlumbohm, Manufacturer
41 Murray St., New York 7, N. Y.

Copyright

Frozen Food Center Opens New Stores In Suburban Cities

BRONXVILLE, N. Y.—New frozen foods branch stores here and in New Rochelle, N. Y., have been opened by the Frostar Frozen Food Center of White Plains, N. Y., announces Carl Seabergh, president.

The two branches will retail frozen foods exclusively, as does the White Plains store, although the latter also acts as dealer for the Deepfreeze line. All types of frozen foods are handled, including pre-cooked foods, and frozen dog and cat food.

In addition to its retail operation, Frostar serves as distributor of frozen foods to some 30 other stores. While these stores might conceivably offer competition to Frostar's retail sales, the result thus far has been to promote sales of frozen foods generally, it is reported.

This setup also permits Frostar to buy in carload lots for its combined wholesale-retail operation. The firm has two trucks, one of which is refrigerated with dry ice to 0° F. for trucking from warehouses to stores. The other, more lightly insulated, delivers frozen foods to householders owning home freezers. To date, home deliveries have been only a small percentage of the firm's total retail sales, but are expected to increase.

Presence of several locker plants in the territory has also aided the Frostar firm, by making people aware of frozen foods. Some locker patrons also purchase in quantities for storage in their lockers.

Consolidated Conditioning Co. Expands Organization

MT. VERNON, N. Y.—With a view to increased postwar selling activity, the Consolidated Conditioning Corp. of Mount Vernon, N. Y. has expanded its organization.

Russell Tree, northeastern district manager of the Carrier Corp., has resigned his position to become president of the Consolidated Conditioning Corp. Ray Duncan and Lewis Wachs, formerly sales engineers for Carrier Corp., have also joined the Consolidated sales staff.

More Oil Burners Seen; Prices Are Question

WASHINGTON, D. C.—Use of March, 1942, prices as the basis for pricing new household and commercial oil burners, when production is resumed, was discussed at the first formal meeting of the OPA's recently appointed Oil Burner Industry Advisory Committee.

The committee elected permanent officers and decided to hold another meeting early in January in Washington to discuss with OPA the effect on oil burner ceilings if prices on parts not manufactured by the industry are increased.

Industry members stated that a fair volume of oil burners will be in production by July, 1945, and that they anticipate taking care of accumulated replacement requirements by the end of 1945. Although WPE has allocated materials for the production of 30,000 oil burners for civilian use during the last quarter of 1944, the short supply of fractional horsepower motors has prevented full achievement of this program.

Approximately 200 firms manufacture oil burners, the normal annual production of which amounts to about 335,000 units, a \$25,000,000 market. Fully 80% of this production has been handled in normal times by some 50 firms. About 80% of the facilities of these firms is now engaged in war work.

Prices of oil burners at the manufacturing level are controlled by the general consumers' durable goods and building materials maximum price regulation (Maximum Price Regulation No. 188).

The committee elected these officers: chairman, R. S. Bohn, president, Preferred Utilities Mfg. Co., New York City; vice-chairman, E. P. Bailey, president, National Airoil Burner Co., Philadelphia; secretary, R. P. Johnston, eastern manager, S. T. Johnson Co., Philadelphia.

Reiley Takes Dealership In Shenandoah, Pa.

SHENANDOAH, Pa. — A firm headed by Edmund A. Reiley has taken over the store formerly occupied by Wilde's on West Centre St. here and will deal in electric refrigerators and other electrical appliances. James F. Martin will serve as store manager.

Locker Plants Need Not Fear Freezer, Says Official

DALLAS, Tex.—Pointing out that processing and bulk storage can't be provided for in the home, S. T. Warrington, of Washington, senior economist, Farm Credit Administration, told the annual conference here of the Texas Frozen Food Locker Association that the anticipated increased use of home freezing units after the war will not injure the frozen food locker industry.

Mr. Warrington called the locker industry a depression-born business which is now serving 1,500,000 families, three-fourths of whom are farmers.

"An additional 600 locker plants will be built during the current year," he said. "Much of the growth of the industry is attributed to the fact that families not only save money, but normally are able to enjoy a better quality of food."

Dr. Luis H. Bartlett, associate professor of mechanical engineering, University of Texas, said a new process for very fast freezing has been worked out at the university.

Govits Refrigeration Co. Locates In Tulsa

TULSA, Okla.—James Govits Refrigeration Co., recently appointed distributor in this territory for Friedrich refrigerators, is now located in larger quarters at 112 N. Main St. here. Facilities in the new location will permit offering a more complete rebuilding service, the firm announced.

Prominent New York City Refrigeration Supply Wholesaler

Ample financed, well recognized in the trade, with proper warehouse facilities and sales organization, is interested in taking on the exclusive distributorship for Condensing Units, Compressors, Replacement Parts, Equipment, Accessories, etc. for Air Conditioning and Refrigeration. Metropolitan coverage. Interested manufacturers submit propositions.

Box 1655

Air Conditioning & Refrigeration News
5229 Cass Ave., Detroit 2, Mich.



PREHISTORIC MAN EARLY FOUND THAT COLD SHOWS UP DECAY-- AND LIKE THE MODERN ESKIMO BURIED SURPLUS MEAT UNDER DEEP SNOW IN WINTER.

MODERN MAN REQUIRES YEAR-ROUND DEPENDABILITY-- AND THAT MEANS ALWAYS-RELIABLE REFRIGERANTS LIKE **ANSUL LIQUID SULFUR DIOXIDE** AND **ANSUL LIQUID METHYL CHLORIDE** IMMEDIATELY AVAILABLE.

Our technical book, "Ansul Refrigerants" (3rd Edition) available upon request
Ansul Chemical Company, MARINETTE, WIS.
"Now in our 30th year"
AGENTS FOR KINETIC'S "FREON -11," "FREON -12" AND "FREON -22"



Build A Better Refrigeration Product With This Policy

Universal Cooler sells to manufacturers only. What does that policy mean to you?

It means you are protected from direct factory competition (sales and service outlets). It means that Universal Cooler is your "refrigerating unit" department, fully and modernly equipped to render highly specialized engineering, production and testing service.

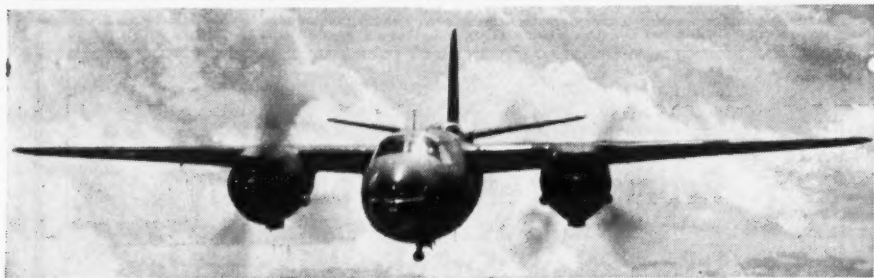
It means that you can count on Universal Cooler to collaborate with you on new developments and applications just as surely as though we were located

under your own roof! It means that Universal Cooler can concentrate on precision manufacture and quality—the "inside" quality of your refrigeration products. Write today for an analysis by a Universal Cooler Field Engineer or send us a cabinet for unit installation and test. Let us show you, too, why the word for 1945 among refrigeration manufacturers is . . .

Buy
"Let's Ask Universal Cooler"

Hermetic, Open-Type Self-Contained, Remote-Type
Refrigerating Units — 1/8 to 20 HP





*Record-breaking
Marauders
are built
with the
Aid of*



Hailed as the outstanding 2-engine bombers of the European air war, the Marauders hold the record for the lowest combat losses in that theatre—only one-third of one per cent! As many as 100 combat missions have been made by a single Marauder without injury to any of her crews.

B-26 Marauders are built by the Glenn L. Martin Co., whose great plant outside of Baltimore uses over 40 Frick Refrigerating Machines for air conditioning and other special cooling services.

Remember: For the really important jobs, specify Frick Refrigeration and Air Conditioning.

FRICK CO., Waynesboro, Penna.

AIR CONDITIONING

Temprite

INSTANTANEOUS LIQUID Coolers

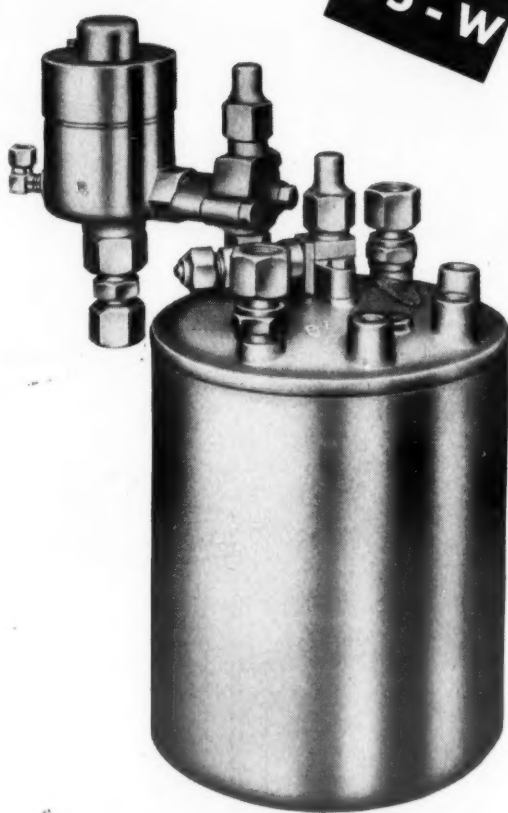
TYPICAL EXAMPLES OF WAR INDUSTRY APPLICATIONS ARE THE COOLING OF—

- 1 Water** for aluminum alloy quenching baths, spot welder tips, war plant cafeterias and food processing.
- 2 Light oils** for machine tools, tool tempering baths, food processing, etc.
- 3 Alcohol** for aluminum alloy rivet and casting quenching baths, control testing installations, etc.
- 4 Brines** for low temperature baths for age treatment of steel, low temperature circulating systems.
- 5 Acids and caustics** for metal treating and cleaning baths, laboratory and testing work, etc.

TEMPRITE coolers are famous for their high operating efficiency and accurate temperature control. These features result from the basic patented design which permits submerging the cooling coils directly in the liquid refrigerant; together with the use of the Temprite sensitive control valve.

★ ★ ★ ★

Temprite coolers are playing an extremely important part on the Industrial War Front. New applications for improving and increasing production on important war industry operations are being found every day for Temprite coolers.



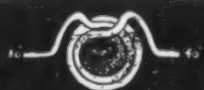
Model: 55-W medium size industrial cooler. Capacity 90 gallons per hour.

Dealers

Temprite liquid coolers are available for dealers and distributors on authorized orders and orders direct from our armed forces. Write our sales department today for complete details.

TEMPRITE PRODUCTS CORP.

Originators of Instantaneous



Liquid Cooling Devices

43 PIQUETTE AVENUE

DETROIT, MICHIGAN

Patents Involved In Potter vs. S-W Case

Editor's Note: A number of readers have expressed interest in obtaining more information about the patents Nos. 2,056,165 and 2,171,712 on household mechanical refrigerators, which were involved in the recent patent litigation of Refrigeration Patents Corp. vs. Stewart-Warner and Potter Refrigerator Corp. vs. Stewart-Warner. A jury in U. S. District Court held the patents valid, and infringed by Stewart-Warner.

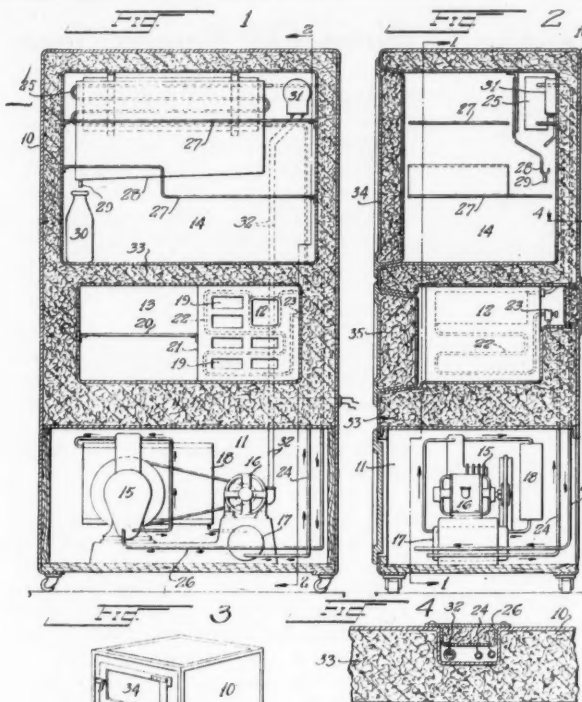
Given below are the claims relied upon by the plaintiff in each case:

2,056,165 REFRIGERATOR

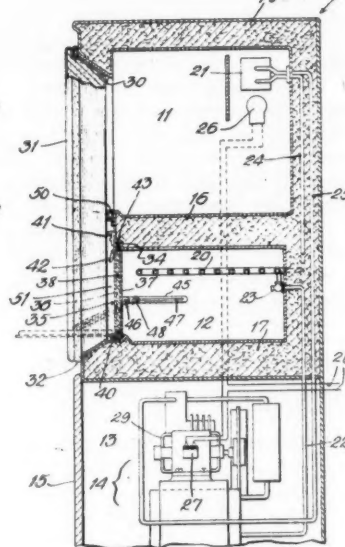
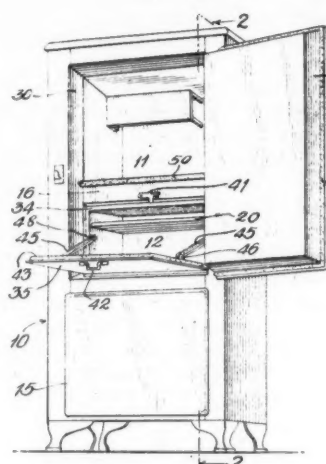
Lewis J. Bronaugh and Thomas I. Potter, Portland, Ore.; said Bronaugh assignor to said Potter.
Application Feb. 16, 1931, Serial No. 516,032.

21 Claims. (Cl. 62-116)

10. A refrigerator comprising a cabinet formed with a cooling compartment and a freezing compartment, said compartments being insulated from each other and from the outside atmosphere, an expansion line passing through the freezing and cooling compartments, said line including a freezing coil in the freezing compartment and a non-frosting coil in the cooling compartment, an expansion



Drawings of the patents involved in the infringement suit between the Potter interests and Stewart-Warner Corp. include No. 2,056,165 at left and 2,171,712 below.



valve in said line at its point of entrance into the freezing compartment, means for forcing refrigerant through said line, and a controller for said means actuated by temperatures in the cooling compartment, the thermal insulation of the compartments being relatively so proportioned as to admit a greater inflow of heat into the cooling compartment than into the freezing compartment.

11. A refrigerator comprising a cabinet formed with a cooling compartment and a freezing compartment thermally insulated from each other and from the outside atmosphere, refrigerating means for cooling the freezing compartment to a lower temperature than that of the cooling compartment, and thermo-sensitive means in one of the compartments for controlling said refrigerating means, the thermal insulation of the compartments being so relatively proportioned as to admit a greater inflow of heat into the cooling compartment than into the freezing compartment.

12. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a refrigerating system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising an expander in each chamber and apparatus within the cabinet for circulating a volatile fluid through such expanders, said fluid constituting the sole refrigerant thus circulated, said system also including means constructed and arranged to maintain the external surface temperature of the expander in the warmer chamber above said freezing point.

14. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a compressor-condenser-expander system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising a chilling element in each chamber and apparatus within the cabinet for circulating a volatile fluid through the chilling elements, said fluid constituting the sole refrigerant in said system, said system also including means constructed and arranged to maintain the external surface of the chilling element in the warmer chamber above said freezing point.

16. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a compressor-condenser-expander system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising a pair of chilling elements connected in series with one of the elements in each chamber and apparatus within the cabinet for circulating a volatile fluid through said elements, said fluid constituting the sole refrigerant in said system, said system also including means constructed and arranged to maintain the external surface of the chilling element in the warmer chamber above said freezing point.

18. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a

compressor-condenser-expander system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising a chilling element in each chamber and apparatus within the cabinet for circulating a volatile fluid through the chilling elements, said fluid constituting the sole refrigerant in said system, said system also including means constructed and arranged to maintain the humidity in the warmer chamber at a relative value of at least 100% at 32° F.

2,171,712

HOUSEHOLD REFRIGERATOR

Thomas I. Potter, Buffalo, N. Y., assignor to Refrigeration Patents Corp., Buffalo, N. Y., a corporation of New York.
Application Oct. 25, 1935, Serial No. 46,691. Renewed Sept. 9, 1938.
8 Claims. (Cl. 62-89)

8. A household refrigerator, comprising a cabinet having heat insulating walls and provided with a heat insulating partition dividing the interior of the cabinet into a pair of cooling chambers, means for cooling one of the chambers to a much lower temperature than the other, the cabinet being formed with an outer doorway into which both of the chambers open, an outer door adapted to close said outer doorway, the cabinet being also formed with an inner doorway for the cooler of the two chambers, an inner door adapted to close said inner doorway and spaced from said outer door, and sealing means for preventing the air in the warmer chamber from circulating into and out of the space between the doors when both doors are closed.

10. A household refrigerator, comprising a cabinet having heat insulating walls and provided with a heat insulating partition dividing the interior of the cabinet into a pair of cooling chambers, means for cooling one of the chambers to a much lower temperature than the other, the cabinet being formed with an outer doorway into which both of the chambers open, an outer door adapted to close said outer doorway, the cabinet being also formed with an inner doorway for the cooler of the two chambers, an inner door adapted to close said inner doorway and spaced from said outer door, and sealing means for preventing the air in the warmer chamber from circulating into and out of the space between the doors when both doors are closed.

12. A household refrigerator, comprising a cabinet having heat insulating walls and provided with a heat insulating partition dividing the interior of the cabinet into a pair of cooling chambers, means for cooling one of the chambers to a much lower temperature than the other, the cabinet being formed with an outer doorway into which both of the chambers open, an outer door adapted to close said outer doorway, the cabinet being also formed with an inner doorway for the cooler of the two chambers, an inner door adapted to close said inner doorway and spaced from said outer door, and sealing means for preventing the air in the warmer chamber from circulating into and out of the space between the doors when both doors are closed.

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Experiments at Penn State Put New Light on Quick-Freezing Practices

Advantages Claimed For the Quick-Freezing of Produce 'In the Raw' By Immersion Method

NEW YORK CITY—Some new concepts in the quick-freezing of foods for preservation were advanced by Prof. John E. Nicholas of Penn State College in his report on "Quick Freezing Performance of an Experimental Sub-Zero Food Freezer" given before the annual A.S.R.E. convention here.

Prof. Nicholas said that results of his experimental work pointed to the following factors as possibly being of major importance in quick-freezing operations:

(1) The quick-freezing of food "in the open," so to speak, packaging it later.

(2) Freezing by the immersion method.

Quoting Clarence Birdseye, Prof. Nicholas said that the characters of air frozen and quick frozen products are different. By Mr. Birdseye's definition, quick-frozen products are those which have been frozen by direct immersion in a liquid refrigerant or by a direct contact with a very low temperature refrigerant. Quick-frozen products pass quickly through the zone of crystal formation, preferably in not more than 30 minutes. Mr. Birdseye terms other procedures "sharp freezing."

Three Stages of Freezing

In quick-freezing processes products go through three definite stages in the low temperature environment, said Prof. Nicholas. The product is first cooled from the temperature it is at during the time of preparation to the freezing temperature of the product, which is somewhere between 21 and 31° F.

Second phase of freezing is the one in which the solidification or crystallization of the moisture content in the product takes place, temperature remaining relatively constant for the product. This time is known as "the zone of maximum crystal formation."

When substances crystallize, Prof. Nicholas explained, the size of the crystals depends upon the time allowed for them to form. The faster the product passes through the zone of crystal formation, the smaller the crystals and quicker the freezing; the interval for crystallization to attain quick freezing is said not to exceed 30 minutes.

Third stage is the "sub-cooling" of the product very nearly to the temperature of the air, plate, or liquid which is providing the freezing effect.

Prof. Nicholas used an experimental freezer which was capable of temperatures as low as -50° F. and as high as 20° F. with or without air in motion. Freezing by direct immersion in brine is also possible in this unit.

One of the studies made by Prof. Nicholas was on the rate of freezing of whole hot-house grown tomatoes under two different conditions.

In moving air at a temperature varying from -40.3° F. to -43.6° F. it took 32 minutes to pre-cool from 74.8° F. to the freezing temperature of 31° F. Duration of the period of crystal formation was 10 minutes and sub-cooling was completed at the end of 71 minutes.

Difference in Time

A similar tomato, frozen by direct immersion in unagitated brine at -33° F., was pre-cooled in 21 minutes. The length of time taken for crystal formation was 5 minutes, and sub-

cooling to within 3° F. of the brine was completed in 45 minutes.

Tomatoes used in these experiments were hot-house grown and frozen without wrappings and without steaming or scalding before freezing. After seven days they were removed and permitted to thaw out in an ambient air temperature of

75° F. The tomatoes were found in good condition for slicing when sufficiently thawed.

Further experiments were conducted to ascertain rates of freezing of pint packages of pineapple, spinach, and green beans in a -40° F. air temperature. The spinach and beans were steamed for five minutes, then cooled and packaged; the pineapple was cut into small cubes and packed without sugar or syrup. Containers used were of cardboard paraffined on both sides.

Pre-cooling period for the four packages was approximately 65 minutes. The duration of the zone of crystal formation was approximately 45 minutes, and the sub-cooling was completed at the end of three hours, when all the packages attained very nearly the temperature of the air.

One point marked by Prof. Nicholas was that the two pineapple packages, originally at 74° F., attained the freezing zone at almost the same time as the spinach and green beans, initially at 52° F.

In his summary, Prof. Nicholas declared:

"It was found possible to decrease the time interval during freezing to a remarkably short duration when the product is frozen without wrapping, and when the product is directly immersed in the refrigerant.

The time required for the packaged products to pass through the zone of crystal formation was 4½ times that for the unwrapped tomato."

A written comment by Prof. A. L. Hesselschwerdt of Massachusetts Institute of Technology, read by Joe Stevens of Minneapolis-Honeywell Co., praised Prof. Nicholas' paper for showing that home freezers would have to have large refrigeration capacity to provide freezing within the time limits for proper crystal formation.

On the other hand, W. M. Timmerman of General Electric Co. expressed the thought that the experiments weren't necessarily conclusive because they hadn't covered all methods of freezing. He said that he hoped that Prof. Nicholas or someone would study slow freezing, up to 24 hours, and report results.

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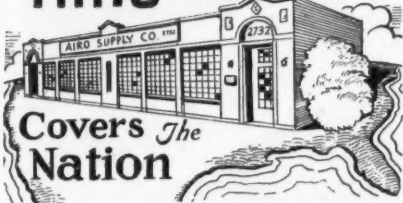
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Dr. Carrier Explains Principal Features Of New Patents on 'Conduit' Conditioning

SYRACUSE, N. Y.—New patents covering the "Conduit Weathermaster" air conditioning system for multi-room buildings have been issued to Carrier Corp., Dr. Willis H. Carrier, chairman of the board, reported last month.

Dr. Carrier described the principal features of the Carrier Conduit Weathermaster system, of which several installations have been made over the past few years, as follows: "The air which is heated and humidified, or cooled and dehumidified, in the central apparatus, is exclusively outside or fresh air. This is only about 20% of the total air required for proper circulation in the conditioned rooms.

"Small high pressure fans discharge this conditioned air at static pressures and velocities much higher than heretofore considered practical. Air velocities as high as 4,000 f.p.m. are usually employed or about 2½ times the duct velocity allowable in conventional systems.

"Due to the small volume of conditioned fresh air and because of the high velocities employed, we are able to use air conduits instead of ducts, the areas of which are ¼ that required with our own best previous system and about ½ of that employed in conventional duct systems. These conduits, replacing riser ducts, are for the average installation about 6½ inches in diameter for our largest size and are reduced in diameter for most part to about 4 inches.

"Each room is equipped with a weathermaster unit which replaces the conventional radiator, but which serves the room throughout the year, not merely in winter. The high velocity air enters this unit and is discharged through a series of small nozzles so designed that despite air velocities of 4,000 f.p.m. no noticeable noise results.

"The discharge of this air through the unit induces air from the room to enter the unit in volume about four times as great as the conditioned fresh air. The induced air mixes with the fresh air and the mixture of 20% conditioned outside air, and 80% induced room air leaves the unit at a relatively small velocity, but in sufficient volume to provide gentle but adequate air movement throughout the room. The volume circulated is always constant which is very desirable.

"Each room unit is provided with a supplementary conditioning device for heating or cooling the air as may be desired. In fact the greater part of air treatment, whether heating or cooling, may take place in the room. This is controlled by the Carrier 'Thinking Valve' which regulates the heating and cooling action of the unit.

"Since each unit is equipped with a 'Thinking Valve,' which automatically regulates the admission of heating or cooling fluids to the unit, an occupant may set the valve to get exactly the room temperature wanted."

Patents Covering 'Conduit Weathermaster'

Six patents issued to the Carrier Corp. in connection with the "Conduit Weathermaster" system are described briefly as follows:

PATENT NO. 2,363,294, NOV. 21, 1944

This patent covers the main conduit system. The principal claim relates to any system which incorporates the following elements:

(a) A conditioner where air for ventilation (outside air) is conditioned.

(b) Induction units in rooms or areas to be conditioned.

(c) Conduits of a main diameter of the order of 6" with 3" connections to the unit.

(d) Delivering conditioned air into the conduits at a static pressure in excess of 1 inch water gauge and at a velocity of the order of 3,000 to 5,000 ft. per minute.

(e) Inducing return air to mix with the conditioned air discharged from the unit so that a total mixture is produced sufficient to take care of the circulation requirements of the conditioned areas (whereby the use of return ducts is eliminated and the conduits limited in size to the ventilation requirements of the areas).

(f) Passing a conditioning medium (hot water, cold water, etc.) in heat exchange relation with the outside air routed through the conditioner.

(g) Passing any conditioning medium in heat exchange relation with air in the units.

This patent also includes another claim which covers automatic control of such a system wherein the circulation of conditioning medium routed to the units is varied whereby different areas served by different units will be maintained at different temperature conditions.

The patent further includes a claim covering, in general, the use of a valve means for controlling the circulation of conditioning medium through the units with a control element disposed in the path of induced air for regulating the operation of the valve means.

PATENT NO. 2,363,945, NOV. 28, 1944

This patent covers the routing of conditioning fluid through the Weathermaster room units.

The claims cover the supply of water through conduits serving a number of openings leading to the unit so that two of the openings are used for the supply of cold water under summer conditions and two others (one of which may be the same as one of the original two) is used for the supply of hot water under winter conditions.

The reduction in supply of conditioning fluid under summer conditions when the temperature tends to drop; and the increase in supply of conditioning fluid under winter conditions when the temperature tends to drop—is covered in this patent.

The patent also covers any system in which a number of air circulating and conditioning units are served by a common supply line and a common return line, in which conditioning medium of any desired character is circulated at a substantially constant volumetric rate; in combination with any kind of a control for varying the flow of conditioning medium through heat exchange devices in the units to provide for modulation of the conditioning effect provided by each of the units.

PATENT NO. 2,363,944, NOV. 28, 1944

This patent covers a fluid control arrangement in which a double-seated valve is employed with a plurality of ports for admitting fluid through a desired flow circuit. It also covers the type of valve arrangements originally used and which provided an alternative to the thinking valve structures since developed. It also covers the baseboard piping connections serving the units.

PATENT NO. 2,355,629, AUG. 15, 1944

This patent covers the baseboard structure for housing the air, liquid, and drainage lines serving Weathermaster units.

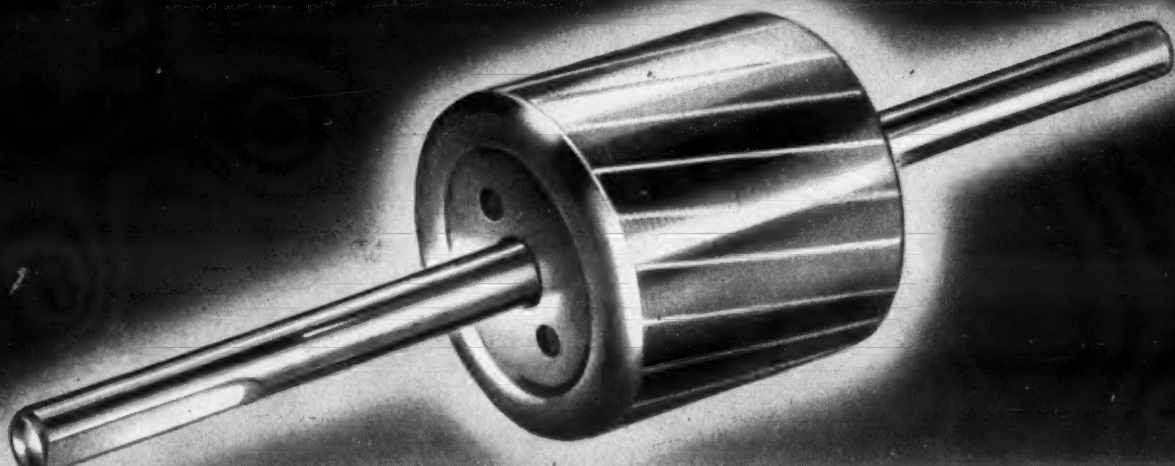
PATENT NO. 2,353,144, JULY 11, 1944

This patent covers the indicator system whereby the occupant of a room in which a unit is located can turn the same valve handle and get a warmer or cooler condition, both summer and winter, even though at one time the movement causes an increase in flow whereas at another time the same movement causes a decrease in flow of conditioning medium.

PATENT NO. 2,352,328, FEB. 22, 1944

This patent covers the "Fulton-Sylphon" type thinking valve having a casing which responds to the temperature of the fluid passing through. A valve assumes one position if the liquid is hot and another position if the liquid is cold, thereby directing different liquids through the valve. Another double-seated valve responds to the temperature in the room to meter the conditioning fluids to maintain conditions as desired. Upon a rise in temperature in summer, more cold water will be metered by the valve while upon a rise in temperature in winter less hot water will be delivered.

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Then check the construction of this patented Flush-Weld rotor. It's exclusively a Redmond design, built into shaded pole AC Micromotors of a twentieth horsepower or less.

It gives you tailored performance. Modifications in electrical characteristics to suit your requirements are readily met by change of inductor resistance.

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This rotor is accurately balanced. And you won't find it gumming up, for oil retainers return the lubricant to the bearings.

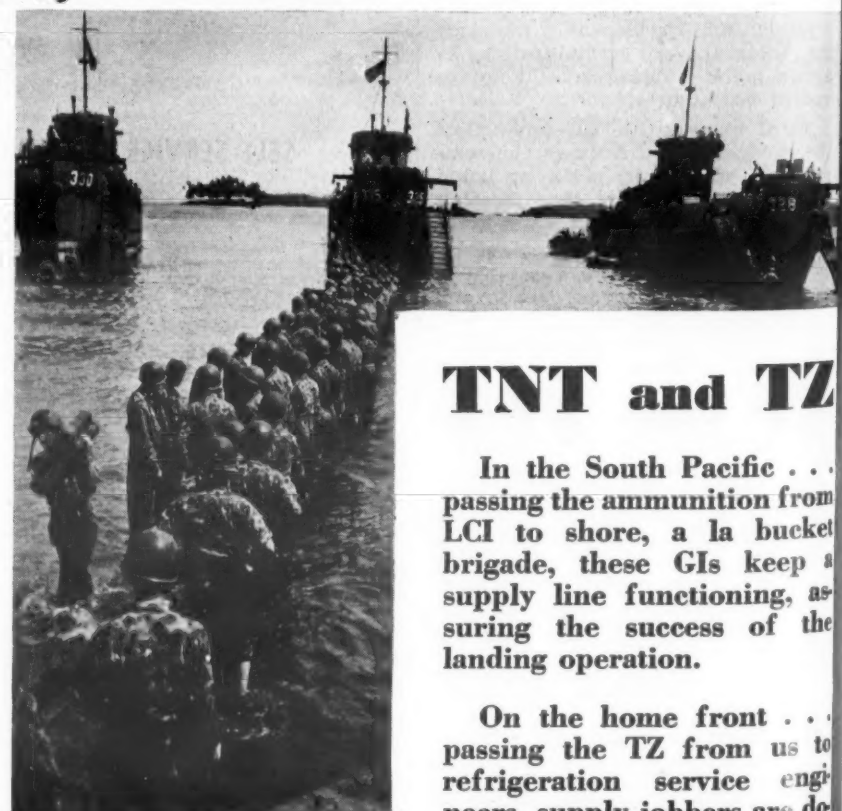
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keep the refrigerant lines of thousands of units operating assuring wholesome, healthful food to the country.

At the war fronts, too, TZ is doing a job destroying moisture chemically . . . but that's another story!

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THAWZONE

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Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

John had everything—and everything before him.

Afternoon of the day on which we read of John Welch's quick departure came a telegram announcing Arthur Hipse's death. Arthur, known by so many in the industry, was on a speaking tour. Taken off a train with a bad cold and high temperature, he died of pneumonia 44 hours later.

And last came that telegram from the War Department—just two days before Christmas. It announced baldly that Paul Keuper had been Killed in Action, in France, in a tank.

None of you knew Paul. He was hardly out of his teens. But a more brilliant, more promising, finer young man never lived.

Paul was a member of our family. Since the day he began winning prizes in grammar school, on through the period when he set all-time Iowa scholastic records, right up past last Christmas—which he spent in the writer's home, giving us opportunity to see how grandly his personality had developed commensurate with his extraordinary mental prowess—Paul had been earmarked for service with the Business News Publishing Co.

So when he was shot out of our lives we lost more than a dear relative and wonderful boy—we lost part of our future.

Readers, forgive us for this moment of somberness. But we can write of nothing else but our sorrow. Those of you who have also known dark moments recently can take comfort—

if comfort there be—in the thought that your sense of irreparable and unutterable loss is shared by thousands of others at this bad moment in world history.

Friendship

All of us are caught in a whirlpool of extra work these days, a whirlpool from which there can be no escape until the wars end.

But we can, and should, give more thought to appreciating and cultivating our families and our friends.

There's no treasure in the world worth so much as a good friend. And since we never know when a good friend may be taken away from us, we should enjoy them to the fullest while we can. As a New Year's resolution for all of us, how about this:

Let's keep our friendships in good repair!

Servel Stockholders Okay Special Shares

EVANSVILLE, Ind.—The previously announced plan of Servel, Inc., to create 100,000 shares of cumulative preferred stock to finance postwar expansion was approved at a special meeting of stockholders.

Some 60,000 shares of the new stock, carrying an annual dividend rate of \$4.50, are expected to be sold shortly. Servel is now capitalized at 100,000 shares of authorized preferred stock and 1,126,926 shares of outstanding common stock.

G-E to Buy Ken-Rad Tube Assets for \$5 Million

OWENSBORO, Ky.—For a price expected to exceed \$5 million, General Electric Co. will purchase all the assets of Ken-Rad Tube & Lamp Corp. here used in the manufacture and sale of radio tubes, according to Roy Burlew, Ken-Rad president, who added that no radical changes in policy or management are contemplated.

140,000 Electric Ranges Planned for 1945

WASHINGTON, D. C.—Production of 35,000 domestic electric ranges per quarter has been approved for 1945, the War Production Board told representatives of the Domestic Electric Range Industry Advisory Committee recently.

About 35% of these ranges will go to the military services and the National Housing Agency, the remainder to institutions and individual consumers who certify need and can show that no additional wiring will be required on their premises.

The 1945 production rate per quarter, the same as that estimated to have been reached in the fourth quarter of 1944, is in line with WPB policy which states that 1945 civilian goods production per quarter cannot, in general, exceed that of the final quarter of this year.

The 140,000 domestic electric ranges authorized for next year at the fourth quarter 1944 production rate of 35,000 compares with 88,000 authorized by WPB for 1944 production.

Gould Heads Exports For Wincharger

SIOUX CITY, Ia.—E. R. Gould, Jr., until recently assistant export manager of Kelvinator Export Division, Nash-Kelvinator Corp., has been named export manager of the Wincharger Corp. here, announces G. H. Calhoun, sales manager.

Mr. Gould will have charge of several lines of electrical equipment including rural electric systems, radio towers, d.c. motors, dynamotors, and a line of special rotary electrical equipment.

Detrola Declares 25-Cent Dividend

DETROIT—Directors of the International Detrola Corp. have declared a quarterly dividend of 25 cents per share to be paid Feb. 1, 1945, to stockholders of record Jan. 15.

The payment will be the fifteenth dividend and the eleventh consecutive quarterly payment of the same amount and applies to 490,000 shares of common stock, the corporation's only capital issue outstanding.

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WAR INDUSTRIES NEED REFRIGERATION

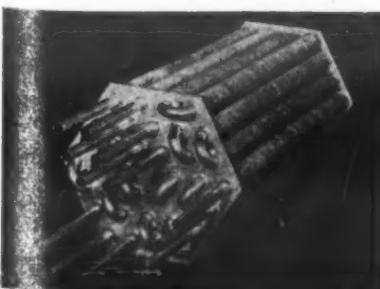
The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.

GENERAL REFRIGERATION DIVISION

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ROME-CONDENSER ★ Jointless Type ★



Rome Water Cooled Condenser Cools insure trouble-free condensing equipment. Used by leading compressor manufacturers.

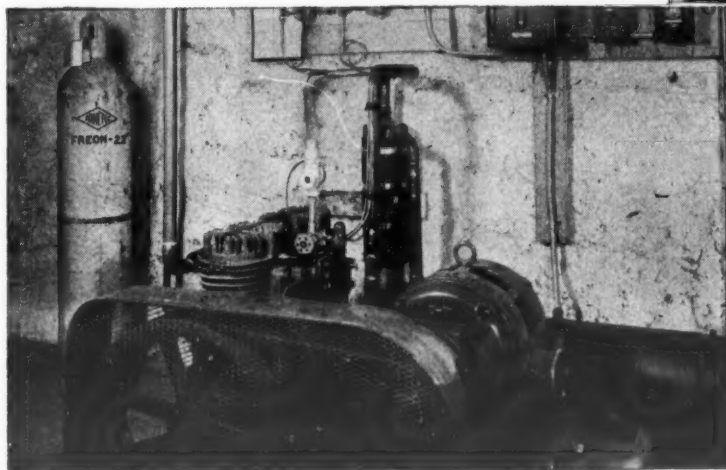
ROME-TURNEY RADIATOR COMPANY

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"FREON-22"

Found highly efficient
in locker storage plants

Reports Consolidated
Conditioning Corporation



Interior of locker storage plant in Bethel, Connecticut, the refrigeration equipment for which was furnished and installed by Consolidated Conditioning Corp., Mt. Vernon, N.Y.

Carrier compressor used in Bethel installation.

ONE OF THE principal operations of Consolidated Conditioning Corporation, Mt. Vernon, New York, is the furnishing and installation of refrigeration equipment in locker storage plants.

"We have found that 'Freon-22' has a decided advantage over other refrigerants for low temperature applications, since positive machine suction pressures can still be maintained as low as -40°F., a condition very favorable in a refrigeration system."

In addition to the highly efficient operation of "Freon-22," stated above, other advantages reported are its complete safety, ease of replenishment in case of loss through leakage, and reduc-

tion of service and maintenance to a minimum.

"Freon-22" is what engineers call a "natural" for low temperature refrigeration such as locker plants, food processing, and for use in auxiliary apparatus for many specialized industrial applications.

And, as Consolidated Condition-

ing Corporation adds: "We have every reason to believe that 'Freon-22' will play a prominent part in the refrigeration industry at the conclusion of the war in the preservation of food as well as for other low temperature requirements." Kinetic Chemicals, Inc., Tenth & Market Streets, Wilmington, Delaware.

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VOLUME 44, No. 1, SERIAL No. 824, JANUARY 1, 1945

On Leave of Absence To Serve Our Country

GRIMLY we all face the prospect of a tough, belt-tightening 1945 on this New Year's Day.

Only a few short weeks ago we were all—from the highest military and political officials on down to the lowliest appliance dealer—working feverishly to prepare for reconversion.

Today it's different. Casualty lists are mounting rapidly, and some such announcements are striking close to home.

Normally, in an issue dated January 1, the staff of AIR CONDITIONING & REFRIGERATION NEWS would wish a Happy and Prosperous New Year to all subscribers. This year, instead, we ask each and every one of you to join us in devoutly praying for a Safe, Successful, and Happy-as-Possible New Year for our men in the armed forces.

Our own thoughts at this time are with the fine young men and women who are listed above in the masthead under the caption: "On leave of absence to serve our country."

These brilliant and talented young people represent not only the bulk of our staff, but the better part of it. On their safe return rests our hope for future progress and growth.

Here at the NEWS we consider our job for 1945 to be twofold: (1) To keep this war-supporting industry well and thoroughly informed; and (2) to keep the Business News Publishing Co. in healthy operating condition so as to assure all our in-service employees fine jobs with a great future when they come back.

As this editorial is being written, lights are lit all over the house. Typewriters are clacking. Comptometers are ka-nick-ka-nicking. The press is rumbling. Vacuum cleaners are moaning. And brain cells are convoluting.

You'd encounter this situation nearly any night you paid us a visit—or any Sunday. And in this darned-near-perpetual labor our uniformed personnel can find their answer to that question: "Will there be a job for me when I return?"

Mighty right there will be! And you'll be welcomed with open (but tired!) arms. Your jobs have been protected by the simple expedient of not hiring anyone to take your places.

This formula—followed sometimes by choice, often by necessity—has been adopted by so many business firms in these United States that we feel our fighting associates should have few fears regarding their postwar employment.

Those of us who are left on the home front are simply taking the rap for the extra work which the absence of our in-service personnel entails.

Even though many of us may be working excessively long hours, and accommodating ourselves to the fulfillment of duties and tasks entirely unsuited to our talents and natural bents, we all realize that our ordeals are infinitesimal as compared to those you are undergoing.

We'll never be able to compensate you for the sacrifices which you have made, are making, and will make. But we'll do our best to keep the motors running in those vehicles which you'll drive toward peacetime goals of achievement and plenty.

God bless you, one and all—and bring you back safely soon!



This Water Valve Can't Stick!

Look at the picture and you'll see it's true—here's a water valve that *can't stick*! Note how water flowing through the valve body can touch only three parts . . . the valve seat, valve disc holder and extension sleeve . . . all of non-corrosive material.

See how the rubber diaphragms seal off the bellows and range spring . . . protecting sliding parts from the abrasive deposits from water. Nowhere will you find an opening for sedimentation, corrosion or rust!

This is the PENN Series 246 Water Regulator, available in both flanged and threaded styles and in a wide range of sizes. Each has a valve seat that will not stick . . . a range spring that will not rust . . . and complete freedom from water hammer!

Write today for full information, available without cost in Bulletin R-1986. Penn Electric Switch Co., Goshen, Ind. Export Division: 13 E. 40th Street, New York 16, U.S.A. In Canada: Powerlite Devices, Ltd., Toronto, Ont.

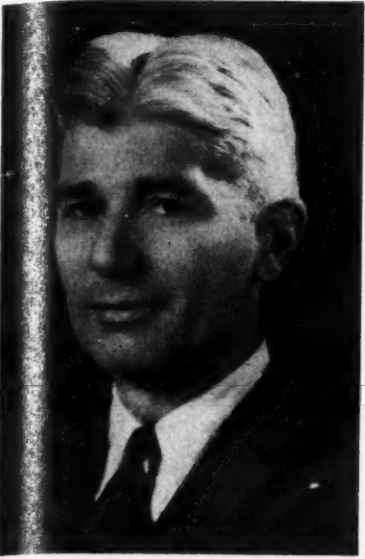
Penn



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

Assists Sales Manager At Wolverine Tube



JOHN A. MARSHALL

Recently named assistant to the general sales manager of Wolverine Tube Division, he will continue to supervise the company's advertising department.

Freck Radio Supply Adds Refrigeration Parts

ASHEVILLE, N. C.—Freck Radio & Supply Co., which has been in the radio supply business for the past 20 years, has established a refrigeration parts jobbing department, announces T. A. Freck, manager.

The firm occupies two adjoining buildings at 38-30 Biltmore Ave., each 50 ft. by 110 ft. with full basements. Mr. Freck plans to pipe refrigerants from the basement to a cylinder charging board located upstairs.

Filtrine
HIGH EFFICIENCY

**LOW TEMPERATURE
WATER COOLERS**
For Bakeries, Bottlers
and General Application
Capacities to 300 G. P. H. and
storage to 150 gallons.
Water Cooled to 34 degrees.
SAFE-DEPENDABLE-EFFICIENT
SHIPMENT FROM STOCK
Write for Complete Catalog
FILTRINE MANUFACTURING CO.
53 Lexington Ave., Brooklyn 5, N. Y.
"Manufacturers for Over 40 Years"

Gilmer
BELTS

Air conditioning and refrigeration are essential to much of America's war production. That means that the belts so important to such equipment must be rugged, long-lived, and efficient.

Gilmer Belts are real sales getters in this field, and dealers who stock them are bound to do a tidy service business. Don't miss this chance while it's really hot. Get hold of your Gilmer jobber today.

L. H. GILMER COMPANY
Tacoma, Philadelphia 35, Pa.
DIVISION OF UNITED STATES RUBBER COMPANY

Pacific Coast Jobbers To Exchange Credit Data on Service Companies

FRESNO, Calif.—Establishment of a credit information exchange on new accounts and past due accounts of all refrigeration service companies on the Pacific Coast was voted at a recent meeting of the Pacific Coast Jobbers Association held here recently under the chairmanship of G. C. ("Doc") Armour of Arbell Refrigeration Supplies, Fresno.

Next meeting of the group, to be open to all manufacturers to discuss postwar problems, will be held during March in San Francisco.

Present at the Fresno meeting were H. G. Stern of Refrigerative Supply, Seattle; L. P. Roth of Refrigeration

Service, Inc., Los Angeles; G. C. Armour; N. W. Edwards and F. H. McLaughlin of Refrigeration Power Specialties, San Francisco; R. L. Hinshaw and Wm. F. Davidson of Hinshaw Supply Co., San Francisco.

Peter H. Askew and Merle F. Stutzman of Refrigeration Supplies Distributor, Los Angeles; Wyatt R. Brown of Wyatt R. Brown Co., San Francisco; H. E. Clay of Authorized Supply Corp., Los Angeles; W. C. Miessemer of W. C. Miessemer Refrigerative Supply Co., Phoenix, Ariz.; Jess E. Rauch and Cliff Swezy of California Refrigerator Co., San Francisco.



Chatting between sessions of the recent A.S.R.E. meeting in New York City are (left to right) Ed. Kellie, P. B. Reed, Charles R. Neeson, C. P. Russell, and Hugh Porter.

Dependability doesn't happen...

IT'S BUILT INTO EVERY  VALVE



 **MODEL 70-N**
SOLENOID REFRIGERANT VALVE

With a reputation for dependable operation, trouble-free service and leakproof safety, the A-P Model 70-N Solenoid is popular for liquid and suction line control on refrigeration and air conditioning applications up to 53 tons Freon. With its impact type plunger and by-pass principle of operation, the 70-N opens easily and efficiently under high pressures, and with low power

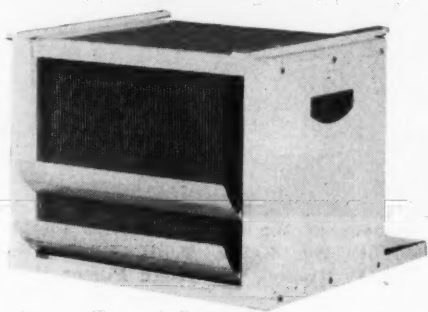
consumption. Available with a wide range of flange sizes, cycle and voltage ratings, with a maximum operating differential pressure, of 200 lbs. For additional data, write for bulletin No. 402.

 **AUTOMATIC PRODUCTS COMPANY**
2450 North Thirty-Second Street Milwaukee 10, Wisconsin
Export Department — 13 E. 40th St., New York 16, N. Y.

**DEPENDABLE
REFRIGERANT VALVES**

STOCKED AND SOLD BY PROGRESSIVE REFRIGERATION JOBBERS EVERYWHERE —
RECOMMENDED AND INSTALLED BY LEADING REFRIGERATION SERVICE ENGINEERS

FILTERPURE UNIT COOLERS



Post-war models with copper and aluminum coils are now in production.

Many new engineering improvements plus tops in performance and eye appeal make them the outstanding unit cooler on the market today.

Write or wire for complete information.

BETZ CORPORATION
Hammond, Indiana

T. W. Binder Co. Sold; Management Unchanged

NEWARK, N. J.—The firm of T. W. Binder Co., wholesale refrigeration supply jobbers, has been acquired by Theodore and Sidney Yecies.

The jobbing concern will operate under the same name and all employees will continue in their present positions, including General Manager Whitman Freeman, who has been manager for the past 12 years.

Refrigeration and air conditioning supplies only, will be handled by the firm, Mr. Theodore Yecies announced.

Gibson Sales Head Sees Bigger Boxes Postwar

BUFFALO—Postwar refrigerators will be larger in capacity and their freezing units will provide more space for frozen foods, F. E. Basler, vice president in charge of sales for the Gibson Refrigerator Co. of Greenville, Mich., predicted here. Mr. Basler came to Buffalo to confer with executives of the Joseph Strauss Co., Inc., distributor of Gibson products in Western New York and the Pennsylvania territory.

K. & T. Refrigeration Service Formed In Los Angeles

LOS ANGELES—K.&T. Refrigeration Service is the firm name under which Herbert H. Turner and John Kiel have published a certificate that they are conducting business at 4308 North Figueroa St., Los Angeles.

Quick Delivery of Frozen Rivets Aids Production of B-29 Superforts



Huge quantities of rivets required to produce the famed B-29 Superfortress at the Boeing plant in Seattle, Wash., must be stored at a temperature of -40° F. Three large Sweden freezing units (two are shown above) each hold 144 storage drawers with a capacity of 30 lbs. of rivets each. The girl here is sacking some rivets for delivery by the mobile freezing unit at the right.



Here is one of the mobile freezing units which distributes cold rivets to 25 local stations scattered throughout the Boeing Plant No. 2 in Seattle where they are stored just prior to use in construction of B-29's. The refrigerating unit operates on an auxiliary motor while in transit, but plugs into an electrical outlet when the truck is stationary.

WE HAVE THE TOOLS TO DO YOUR JOB

THE accumulation of years of experience, the most modern press equipment plus new techniques in molding all combine to assure you that The Standard Products Company will give you the ultimate in molding service . . . efficiently and economically.

The Plastic Division of The Standard Products Company is equipped to mold any plastic part, large or small, by injection, compression, extrusion, transfer or jet molding processes.

The facilities of The Standard Products research laboratory and engineering departments are at your disposal. Write The Standard Products Company if you have a plastic molding problem.



Three of the largest known injection presses in the world are in operation at the Plastic Division plant of Standard Products Company. These massive presses have an injection capacity of 36 oz. per shot and are capable of molding in four colors at one time.

THE STANDARD PRODUCTS COMPANY

General Offices and Research Laboratory

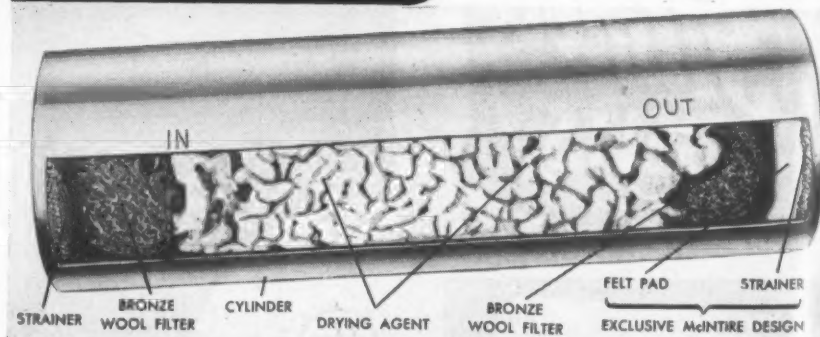
505 Boulevard Bldg.

Woodward Ave. at E. Grand Blvd.

Detroit 2, Mich.

**3-WAY
PROTECTION
FOR EVERY
INSTALLATION!**

**NO MOISTURE
NO SEDIMENT
NO ACID**



ONE DFN cartridge does **THREE** jobs. It adsorbs moisture. It filters sediment. It neutralizes acids. And it's the **ONLY** unit that offers you this triple protection.

The uniformly packed, dust-free re-activated drying agent removes all dangerous moisture. The packing is mechanical, insuring correct quantity and density to each cartridge to permit free flow of refrigerant up to rated capacity. An exclusive anti-sediment assembly covers the **COMPLETE AREA** of the outlet which filters the refrigerant through multiple layers of bronze wool, felt and wire mesh. Positive filtering action is

secured—the smallest particles being retained in the cartridge.

When a DFN cartridge's long service life is ended, it is easily removed from the DFN shell and a new cartridge put in its place. No time consumed refilling with dehydrant on the job—no danger of loose packing. Hermetic sealing of the cartridge container insures a complete drying unit **WHEN WANTED**. Ask your distributor for this unique, triple-action DFN unit.

MCINTIRE CONNECTOR COMPANY
NEWARK 5 NEW JERSEY

Only the

**DFN
SYSTEM**

**DEHYDRATES
FILTERS
NEUTRALIZES**

DEHYDRATORS • STRAINERS

FILTERS • NEUTRALIZERS

Ilg Co. Is Keeping Profit-Sharing Plan 'Alive' For Veterans

CHICAGO—When they return to civilian status, men and women in the armed services who were formerly employed by the Ilg Electric Ventilating Co. of Chicago will get a bigger share in the profits of the company as well as their old jobs back, according to an announcement by executives of the Ilg Welfare Club.

The notification, which was sent to all former employees now in uniform, states that upon their return the veterans will enjoy the same profit-sharing standing as if the time had been spent with the company.

The Ilg Profit-sharing program was originated in 1907 when less than 100 American firms had undertaken such systems. After 37 years the original plan is still in force. Under its terms, each employee's earnings for the year are taken as a basis for determining his share of the profits. New employees qualify after being in the employ of the company three or more consecutive months prior to Dec. 31.

Each worker's earnings are considered his investment in the company, and the percentage to be paid on those earnings is determined at the end of the fiscal year by directors at their annual meeting. Records over the years show payments ranging from 2% to 30% of the yearly salary, with profits shared in 29 of the 37 years the plan has been in operation.

Topping off this intentionally simple plan (and here is where the veterans participate) is an extra bonus for length of service, beginning after the second year a worker is employed. Starting at 5% of the regular bonus, this is annually increased by 5% until, after 11 years of service, the extra bonus amounts to 50% of the bonus paid on annual earnings.

The Ilg Welfare Club, which also functions as a Labor-Management Committee, has ruled that Ilg war veterans will continue to gain in seniority rights as applied to the extra bonus. For example, an employee who has worked three years for the company and served three years in uniform will be entitled to share the profits on a six-year basis which, as J. M. Frank, company president, points out "makes a very important difference to him for that year and all succeeding years to come."

Air Conditioning Ranks High In Hospitals' Postwar Plans

CLEVELAND—Complete air conditioning and radiant heating systems rank high in the postwar plans of the men operating America's 6,600 hospitals, who, at a convention here in the fall, said that these and other improvements are definitely desirable for both new and present hospitals.

Postwar financial plans of hospital directors already call for the expenditure of some \$1,200,000,000 for new construction, a rather high figure considering that investment in hospitals today totals some \$6,000,000,000. Construction plans of hospitals recently surveyed by the American Hospital Association involve expenditures ranging from \$30,000 to \$2,000,000.

One of the chief aims of new construction and modernization programs is to provide a "homey" atmosphere to replace the institutional air which almost invariably pervades hospitals. This effect can be achieved, believe hospital directors, through use of wooden furniture in place of steel beds and bright, colored wallpaper instead of painted walls.

Hospital waiting rooms are also due for improvement, while future hospitals plan special care for "expectant" fathers. Beds will be provided to permit the men to get a little "shut-eye" if they have to wait around most of the night.

Air conditioning, already widely used in operating rooms and post-operative recovery wards, is likely to be extended throughout the whole

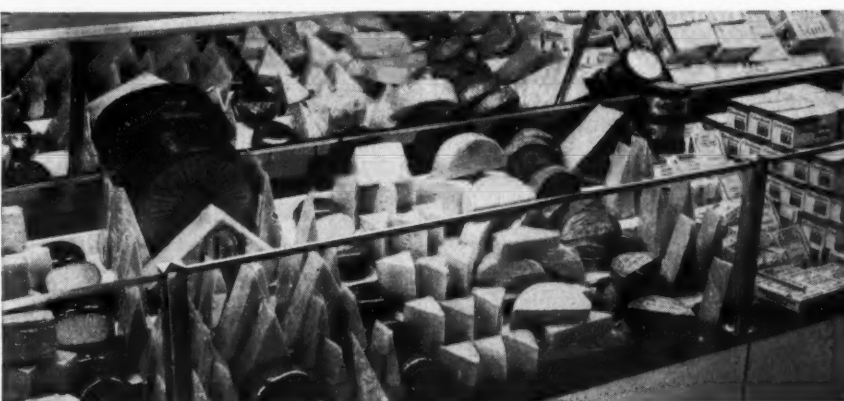
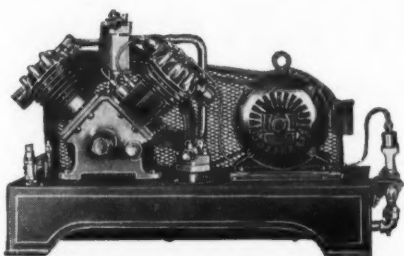
hospital, it is believed. Most surgeons are loud in their praise of air conditioned operating rooms since conditions are much more comfortable and doctors have no interference from perspiration. Carefully controlled air conditions also aid patients in recuperating after operations.

Besides air conditioning, dust controlling equipment and ultra-violet lamps are planned, say hospital officials. "Ultra-violet germ-killing lamp equipment is about impossible to get now, but we're going to install it just as soon as we can," said the director of one hospital.

Electrical communication equipment permitting patients to tell their needs directly to nurses is also being considered. Hospital officials point out that now a patient has to signal for the nurse to come to his room, tell her what he needs, and then she must make another trip to bring the glass of water or milk that he requested. With direct telephonic communication this extra trip to find out what the patient needed could be eliminated.

Electric-eye operated doors are expected to be more widely used in hospitals when these electronic controls become available after the war. Hospital officials say doctors and nurses would find these devices extremely helpful. For example, the surgeon who had "washed up" in preparation for an operation would not have to kick open doors or obtain assistance from nurses, if doors were controlled by electric eye mechanisms.

THE DESIGN OF POST-WAR RETAIL MARKETS ...and refrigeration



What will the post-war retail market be like, is your first question. None of us can decide that definitely at this moment. The trend, because of the existing labor situation, has been toward self-service. Perhaps display cases will be of the beauty, utility and comfort that until now have been dreams. Miracles of laboratory science will be used in their production, including such materials as plastics, new metal alloys, plywood and others, in any desired colors.

To meet the refinements of such innovations, refrigeration will probably be a deciding factor of design. It may be that the refrigeration unit of the post-war era will be contained in one sealed unit, without belts, stuffing boxes, shaft seals or moving parts. It may be that each show case and cooler will have its own unit of the correct size to provide adequate refrigeration. It may mean the end of having one or more compressors in the basement and refrigeration lines running through walls and floors. Stores will be air-conditioned, not only to provide increased comfort for customers, but to prevent spoilage of merchandise.

BRUNNER refrigeration and air-conditioning condensing units will play a vital part in the production of the plastics, glass, and other construction materials used in the design of the post-war retail market as well as in the preservation of our food supplies.

Why not consult our engineers—experts in industrial and commercial refrigeration and air-conditioning—on any temperature or humidity problem?

BRUNNER MANUFACTURING COMPANY
UTICA 1, NEW YORK, U. S. A.



Your refrigeration parts and supply house in Central New York and Northern Pennsylvania

TED GLOU

CENTRAL SERVICE SUPPLY CO.

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209 Jefferson Ave., Scranton, Pa.

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AUTOMATIC CONTROL VALVES AND REGULATORS

2100 INDIANA AVENUE • CHICAGO 16, ILL.

HERE'S YOUR FUTURE'S MOST PROFITABLE

Sales Leader



THE *New* BEN-HUR FARM and HOME Freezer

HOME FREEZERS promise you a future market conservatively estimated at 500,000 units a year! BEN-HUR will be ready to open this profitable market for YOU . . . with the new BEN-HUR FARM and HOME FREEZER.

Already laboratory tested, and proved under every possible operating condition — the product of famous artist designers and experienced refrigeration engineers, BEN-HUR FARM-HOME FREEZERS will be available in sizes for every family's need . . . a complete line that will suit every home.

Check your community now in both farm and urban homes. You'll find ready demand for the recognized advantages of home freezing and frozen storage — a waiting market that you can serve profitably with BEN-HUR FARM-HOME FREEZERS.



BEN-HUR distributors are being appointed now. Be sure you get in on the ground floor, write for details today.

BEN-HUR MANUFACTURING CO.
634 East Keefe Avenue Milwaukee 12, Wisconsin

BEN-HUR FARM LOCKER PLANTS

INVENTORS - ENGINEERS

Old established manufacturer wants new ideas for use of finned tubing in refrigeration, cooling, heating, and air conditioning. Outright purchase or royalty. Box 1657, Air Conditioning & Refrigeration News.

Canadian Refrigeration Journal

The only publication servicing the industry in Canada

National Business Publications Limited
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The Newest and Finest
ELECTRIC WaterCoolers

ALL SIZES FOR NAVY AND LAND USE

THE REVELATION CO.
L. E. RABJOHN
2801 San Fernando Rd. Los Angeles 41, Calif.

HOUSEWIVES EXPRESS PREFERENCE FOR REFRIGERATORS EQUIPPED WITH STAINLESS STEEL SHELVES



WALL WIRE PRODUCTS COMPANY

11333 GENERAL DRIVE
PLYMOUTH, MICHIGAN

Makers of STAINLESS STEEL AND

RETINNED REFRIGERATOR SHELVES AND WELDED WIRE PRODUCTS

R. O. Browne Organizes Own Firm In New York

NEW YORK CITY—R. O. Browne, formerly maintenance sales manager and service manager for Refrigeration Corp. of America, recently organized Standard Refrigerators, Inc., here, to deal in commercial and industrial refrigeration and air conditioning applications.

Mr. Browne, who is vice president and secretary of the new firm, is also executive vice president of the Refrigeration and Air Conditioning Guild of New York.

Westinghouse Appoints J. J. Anderson as Eastern Supervisor

NEW YORK CITY—J. J. Anderson has been named eastern district supervisor of the refrigeration specialties department of Westinghouse Electric & Mfg. Co., and will head-quarter at the eastern district offices of the appliance division at 40 Wall St. here, announces W. H. Loeber, eastern district manager of the appliance division.

Mr. Anderson, who will be responsible for sales in the New England states, New York state, and Northern New Jersey, joined Westinghouse in 1937 in the student training course. He was air conditioning supervisor in the central district until 1941, when he was transferred to the war products department.

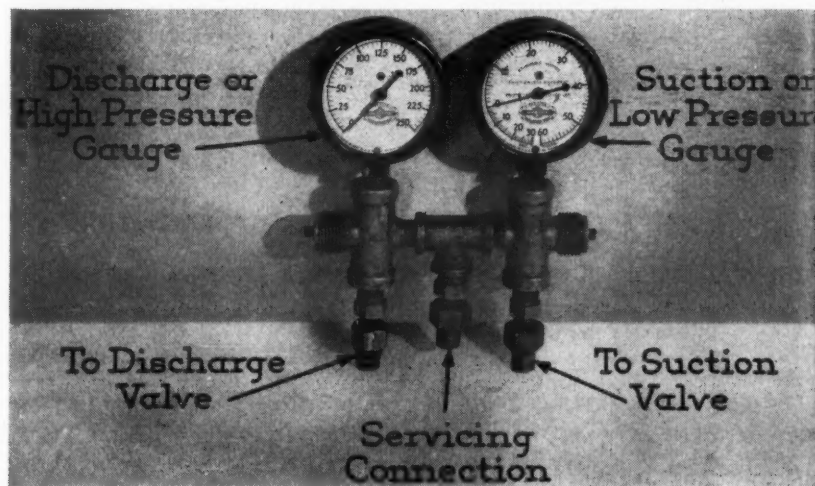
Servicing Frigidaire Instalment No. 2

5—Checking Refrigerant Pressures

Temp.	Freon-12	SO ₂	F-114	NH ₃	Bulvac C ₂ H ₁₀	CO ₂	Methyl Chloride	Ethyl Chloride
-40	11.0°	23.5°	26.1°	8.7°	15.0°	205.9 lbs.	15.8°	13.7°
-35	8.4°	22.4°	25.4°	5.4°	13.2°	225.8 lbs.	11.4°	11.4°
-30	5.5°	21.2°	24.7°	1.6°	11.4°	247.0 lbs.	9.1°	9.1°
-25	2.3°	19.6°	23.8°	1.3 lbs.	9.1°	269.7 lbs.	6.1°	6.1°
-20	5 lbs.	17.9°	22.9°	3.6 lbs.	6.1°	293.9 lbs.	3.0°	3.0°
-15	2.4 lbs.	16.1°	21.7°	6.2 lbs.	3.0°	319.7 lbs.	2 lbs.	2 lbs.
-10	4.5 lbs.	13.9°	20.6°	9.0 lbs.	2 lbs.	347.1 lbs.	2.0 lbs.	2.0 lbs.
-5	6.8 lbs.	11.5°	19.2°	12.2 lbs.	1.5 lbs.	376.3 lbs.	1.1 lbs.	1.1 lbs.
0	9.2 lbs.	8.9°	17.8°	15.7 lbs.	1.0 lbs.	407.3 lbs.	0.6 lbs.	0.6 lbs.
+5	11.9 lbs.	5.3°	16.0°	19.6 lbs.	0.8 lbs.	440.1 lbs.	0.2 lbs.	0.2 lbs.
+10	14.7 lbs.	2.6°	14.3°	23.8 lbs.	0.6 lbs.	474.9 lbs.	0.1 lbs.	0.1 lbs.
+15	17.7 lbs.	5 lbs.	12.3°	28.4 lbs.	0.5 lbs.	511.7 lbs.	0.1 lbs.	0.1 lbs.
+20	21.1 lbs.	2.5 lbs.	10.1°	33.5 lbs.	0.4 lbs.	550.7 lbs.	0.1 lbs.	0.1 lbs.
+25	24.6 lbs.	4.6 lbs.	7.3°	39.0 lbs.	0.3 lbs.	591.8 lbs.	0.1 lbs.	0.1 lbs.
+30	28.6 lbs.	7.0 lbs.	5.0°	45.0 lbs.	0.2 lbs.	635.3 lbs.	0.1 lbs.	0.1 lbs.
+35	32.6 lbs.	9.6 lbs.	2.0°	51.6 lbs.	0.1 lbs.	681.2 lbs.	0.1 lbs.	0.1 lbs.
+40	37.0 lbs.	12.4 lbs.	5 lbs.	58.6 lbs.	0.1 lbs.	729.5 lbs.	0.1 lbs.	0.1 lbs.
+45	41.7 lbs.	15.5 lbs.	2.2 lbs.	66.3 lbs.	0.1 lbs.	780.4 lbs.	0.1 lbs.	0.1 lbs.
+50	46.7 lbs.	18.8 lbs.	3.5 lbs.	74.5 lbs.	0.1 lbs.	834.0 lbs.	0.1 lbs.	0.1 lbs.
+55	52.0 lbs.	22.4 lbs.	6.0 lbs.	83.4 lbs.	0.1 lbs.	890.4 lbs.	0.1 lbs.	0.1 lbs.
+60	57.7 lbs.	26.2 lbs.	8.0 lbs.	92.9 lbs.	0.1 lbs.	949.6 lbs.	0.1 lbs.	0.1 lbs.
+65	63.7 lbs.	30.4 lbs.	10.3 lbs.	103.1 lbs.	0.1 lbs.	1012.3 lbs.	0.1 lbs.	0.1 lbs.
+70	70.1 lbs.	34.9 lbs.	12.6 lbs.	114.1 lbs.	0.1 lbs.	1079.4 lbs.	0.1 lbs.	0.1 lbs.
+75	76.9 lbs.	39.8 lbs.	15.2 lbs.	125.8 lbs.	0.1 lbs.	1150.4 lbs.	0.1 lbs.	0.1 lbs.
+80	84.1 lbs.	45.0 lbs.	17.9 lbs.	138.3 lbs.	0.1 lbs.	1225.4 lbs.	0.1 lbs.	0.1 lbs.
+85	91.7 lbs.	50.6 lbs.	21.0 lbs.	151.7 lbs.	0.1 lbs.	1304.4 lbs.	0.1 lbs.	0.1 lbs.
+90	99.6 lbs.	56.6 lbs.	24.0 lbs.	165.9 lbs.	0.1 lbs.	1387.4 lbs.	0.1 lbs.	0.1 lbs.
+95	108.1 lbs.	62.9 lbs.	27.5 lbs.	181.1 lbs.	0.1 lbs.	1474.4 lbs.	0.1 lbs.	0.1 lbs.
+100	116.9 lbs.	69.8 lbs.	31.0 lbs.	197.2 lbs.	0.1 lbs.	1565.4 lbs.	0.1 lbs.	0.1 lbs.
+105	126.2 lbs.	77.2 lbs.	34.9 lbs.	214.2 lbs.	0.1 lbs.	1660.4 lbs.	0.1 lbs.	0.1 lbs.

As can be seen from this table taken from a Frigidaire Service Manual (Illustration No. 5), even when similar temperatures are maintained by SO₂ and "Freon-12," the pressures exerted within the systems at these temperatures are widely different. For this reason, it is necessary to use some definite means of checking pressures.

6—Recommended Gauge Assembly

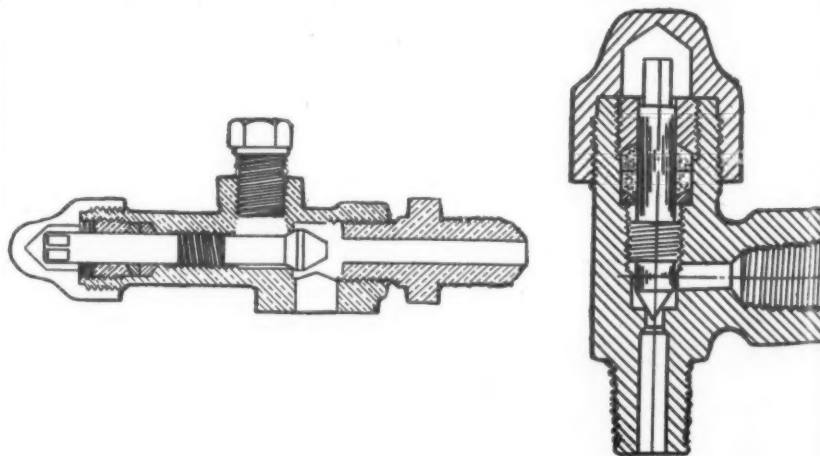


Here is an approved hook-up of gauges which enables service men to determine pressures accurately on both sides of the system and also to by-pass pressure from the high to low side.

As indicated in Illustration No. 6, the left half of the gauge set consists of a high pressure or discharge gauge which is connected, of course, by a line to the discharge valve on the compressor head. The other half consists of a suction or low pressure gauge which is connected to the compressor suction valve.

As for the servicing connection, this is used only for purging or adding oil or refrigerant, and should be kept capped at all times when not in use. In order to clarify the appearance and operation of the compressor valves to which the gauge set is connected, typical compressor shut-off valves are shown in Illustration No. 7.

7—Typical Compressor Shut-off Valves



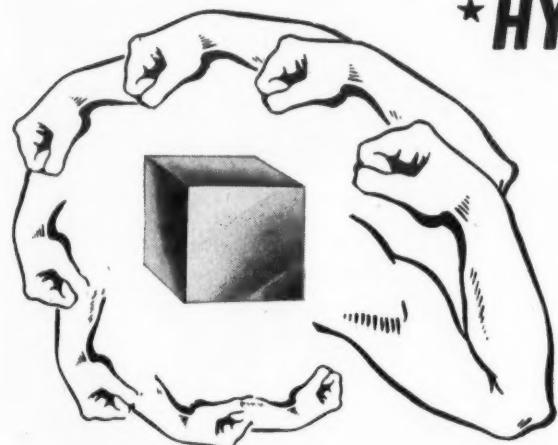
On the left is a typical two-way shut-off valve. Some condensing units are equipped with two of these valves—one in the high pressure side, the other in the suction side.

Other types of compressors, however, have two of the simpler one-way service valves in the same relative positions. This valve is shown on the right of the picture and needs no further explanation.

As for the two-way valve, its operation will be understood by noting that it has double seats, so that when the stem is backseated, the top fitting can be removed and connections made without loss of refrigerant. Unless the low pressure control is attached to this connection, the valve should be kept backseated at all times after examining.

*HYDRAULIC-ACTION gives you POSITIVE ACTION

because solid-liquid-filled bulb and capillary provide expansion force comparable to that of a solid-metal bar.



EXPANSION and contraction of a metal with heat and cold is definite and exact. With each degree of temperature the amount of expansion is exactly the same.

A tube or pipe, completely filled with liquid is comparable to a solid-metal bar. The rate of expansion or contraction of the liquid, like that of the bar, is definite and predictable.



Ever see a frozen water pipe? The terrific force of the expansion of the water cracks the strong iron pipe as effortlessly as you would tear a sheet of paper.

8 EXCLUSIVE FEATURES OF WHITE-RODGERS HYDRAULIC-ACTION TEMPERATURE CONTROLS

1. May be mounted at any angle or position, above, below or on level with control point.
2. Hydraulic-Action Principle incorporating solid-liquid-filled bulb and capillary provides expansion force comparable to that of a metal bar.
3. Diaphragm motion uniform per degree of temperature change.
4. Power of solid-liquid charge permits unusually sturdy switch construction resulting in positive contact closure.
5. Heavier, longer-wearing parts are possible because of unlimited power.
6. Dials are evenly and accurately calibrated over their entire range because of straight-line expansion.
7. Controls with remote bulb and capillary are not sensitive to change in room temperature. Accuracy of control is not affected by temperature changes in surrounding area.
8. Not affected by atmospheric pressure. Works accurately at sea level or in the stratosphere without compensation or adjustment.

Hydraulic-Action, an exclusive feature of White-Rodgers temperature controls, gives positive action

at every degree in the range of temperature for which it is designed.

Hydraulic-Action—how it works

The diagrams below picture the action of the solid-liquid charge in actuating the diaphragm that opens and closes the switch mechanism of the control.

CONTRACTED
Above is a cross section of the diaphragm and part of the liquid-filled capillary. In this view the liquid has contracted, releasing pressure on the diaphragm and causing the switch contacts to function.

In this cross sectional view, the liquid charge of the capillary has expanded with a rise in temperature. The positive force of this hydraulic action forces the diaphragm outward and causes the switch contacts to function.



EXPANDED

Actual size illustration of the White-Rodgers Hydraulic-Action diaphragm body, the actuating element of every White-Rodgers temperature control. It is so designed as to exert full pressure at the point of contact with the switch mechanism.



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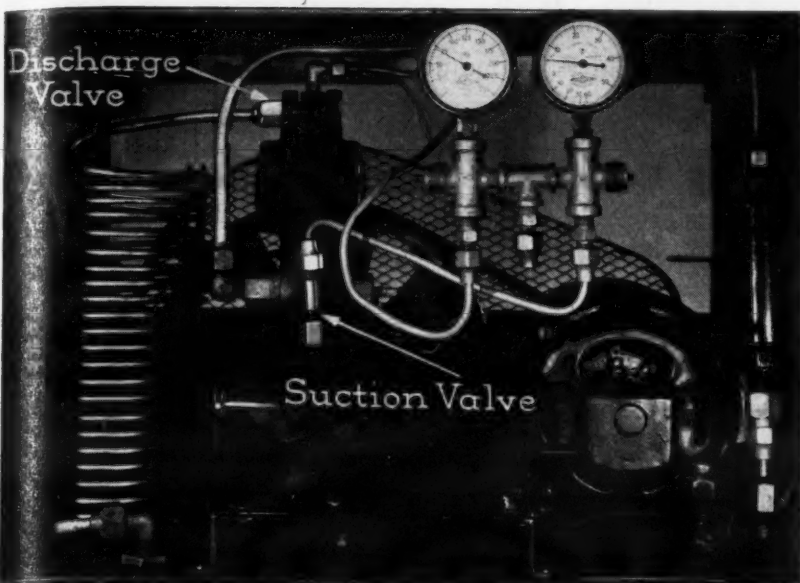
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8—How Valves and Gauges Operate

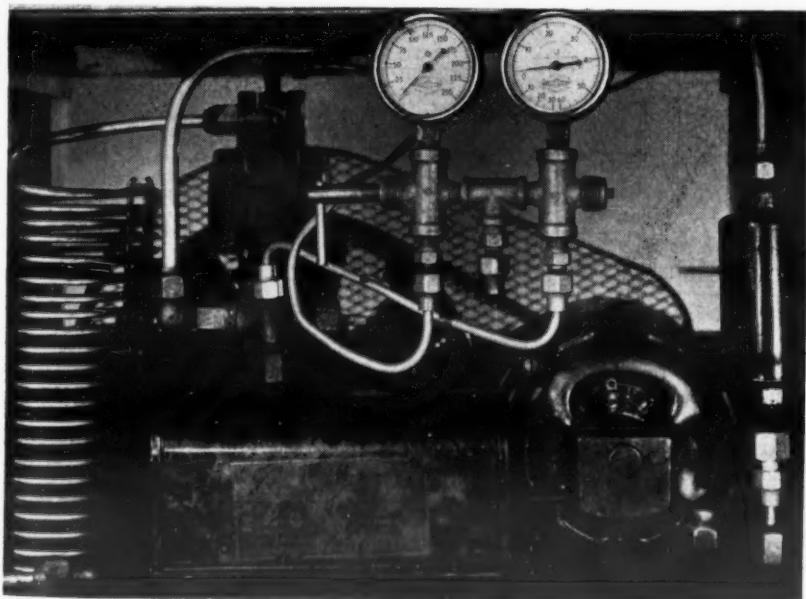


The construction and operation of the compressor valves, and how the gauge set is connected to them is shown in Illustration No. 8. It is a typical installation—the discharge gauge connected to the compressor discharge valve, the suction gauge connected to the compressor suction valve, and the servicing connection capped.

When installing the gauges, the two compressor valves are first backseated, the flare nuts or fittings removed, and the gauge lines connected. This done, the compressor valves can be opened slightly, and the refrigerant pressure in the system will register on the gauges.

To remove the gauge set without letting refrigerant escape, first backseat the compressor discharge valve, which will check the refrigerant at that point. Then open both gauge valves to permit the refrigerant in the line to be pulled into the low side of the system.

9—When to Remove Gauges



Gauges can then be removed when they show equal pressures. Simply close both gauge valves and backseat the suction valve on the compressor. Don't forget to return the compressor suction valve to the intermediate position after the gauge set is removed. As soon as gauges are disconnected, always be sure to replace the fittings in order to keep out moisture and foreign particles.

It pays to take care of gauges—and use them properly—on every service call (it is also profitable). Those are the two basic service operations—that of testing for leaks and the recommended method of checking refrigerant pressures. Inasmuch as these are fundamental steps on practically every service call, they should be familiar in every detail.

Program For Civilian Stoker Production May Suffer 'Cutback'

WASHINGTON, D. C.—In line with the program to prevent added civilian production from interfering with essential war output, members of the Stoker Manufacturers Industry Advisory Committee have been advised by WPB that authorizations for the first quarter of 1945 under the regular program would be subjected to a more critical review than was the case early in the fourth quarter.

In spite of the fact that a number of production authorizations have been granted, members of the committee said that only 50% of the stokers authorized are expected to be produced in the fourth quarter.

Factors involved in this inability to produce stokers were the shortage of motors and difficulties in procuring castings, committee members said.

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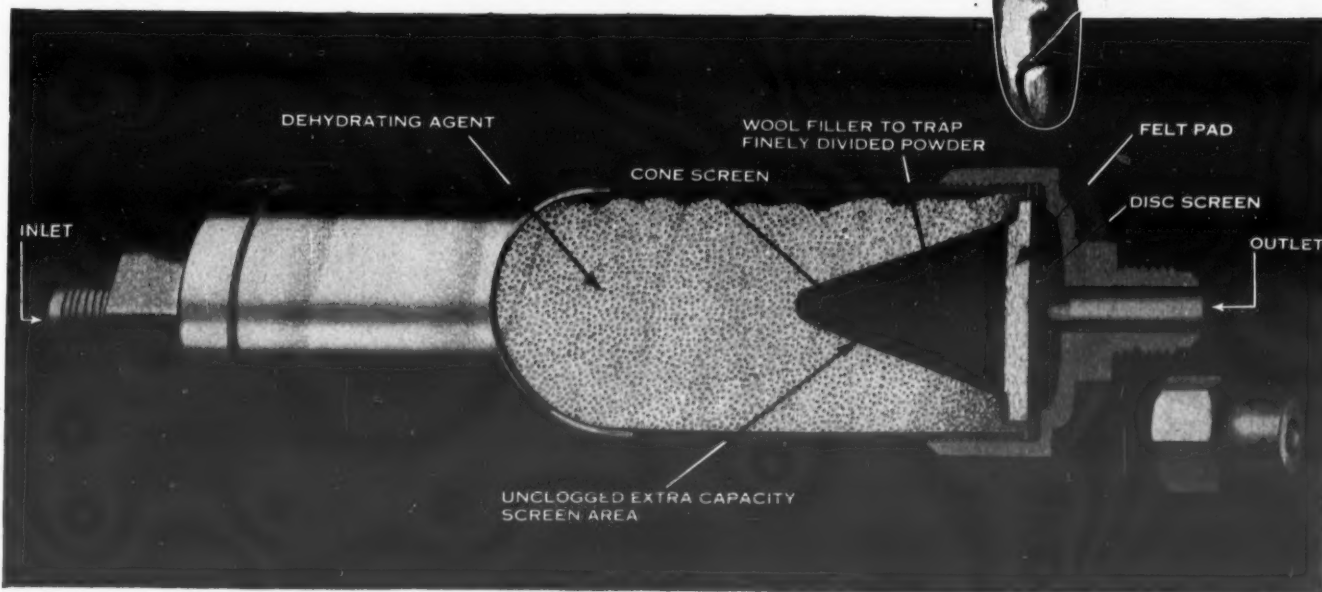
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With the M.B.Co. CONE SCREEN OUTLET, such finer crystals and powder are forced to the base of the cone, leaving the center and tip of the screen open to the free flow of refrigerant.

In addition, the cone screen is filled with pure wool which traps such particles that are sufficiently fine to pass through the screen mesh.

Particular attention has been paid to screen areas in Mueller Brass Co. Filters and Dehydrators, so that each size permits efficient passage to the maximum refrigerant volume that is used in a particular size refrigerant line.



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PORT HURON, MICHIGAN

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Pratt, President

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Compressor Shaft Seals (Part 3)

Fig. 4 illustrates one of the early types of the stationary bellows type seals. The bellows permitted the use of a very much reduced effective diameter "A" over that of a diaphragm, so that the difference between "A" and "B," the diameter of the seal nose, was greatly reduced, thus making the unseating force exerted by crankcase pressure much less and permitting the use of a much lighter spring, consequent savings in current usage, and giving longer life by reason of the reduction of wear.

Nevertheless there still is considerable unbalanced force from crankcase pressure to be overcome and considerable wear. Moreover there is wear on the shoulder of the shaft and this wear takes the form of a circular channel cut by the nose.

The bellows assembly including the nose could be easily replaced in the field, but the shaft had to be removed from the compressor, set up in a lathe or grinder and the shoulder refaced. This decidedly was not a field

Fig. 4 Bellows Seal - - With Stationary Bellows

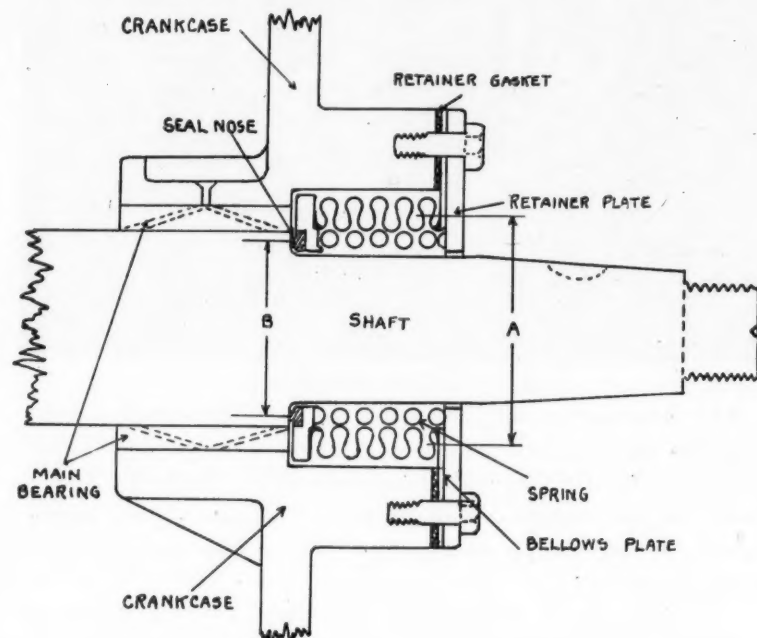
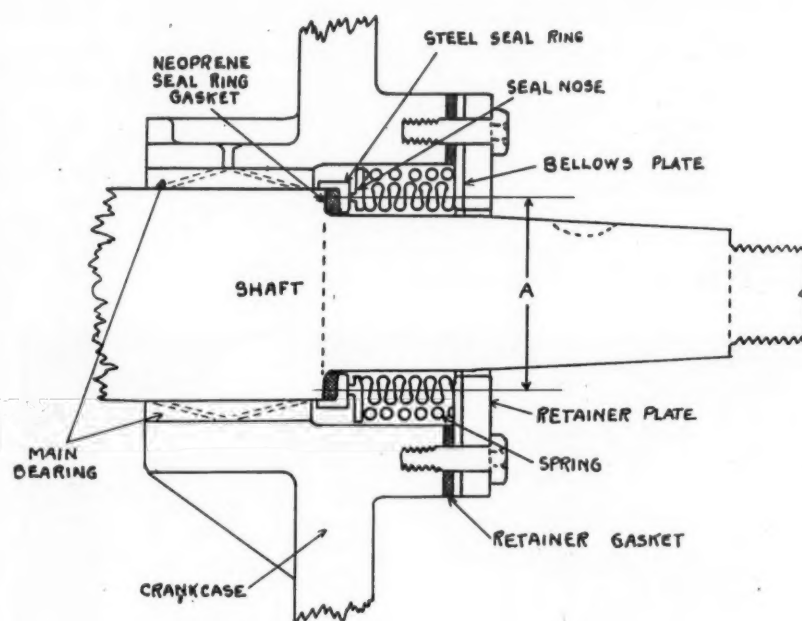


Fig. 5 Balanced Bellows Seal



operation so the replaceable design illustrated in Fig. 5 was adopted.

On some types this style of seal was standard equipment on new compressors so that in case of seal leak the separable steel seal ring and its neoprene gasket can be removed and replaced at the same time as the bellows assembly is replaced.

For earlier model compressors that had the type of seal shown in Fig. 4, and on which the shoulder of the shaft became worn, a field service kit is provided consisting of a steel seal ring and neoprene gasket, as shown in Fig. 5, which are put right on the shaft up against the rough shoulder on the shaft and thus provide a new smooth shaft shoulder.

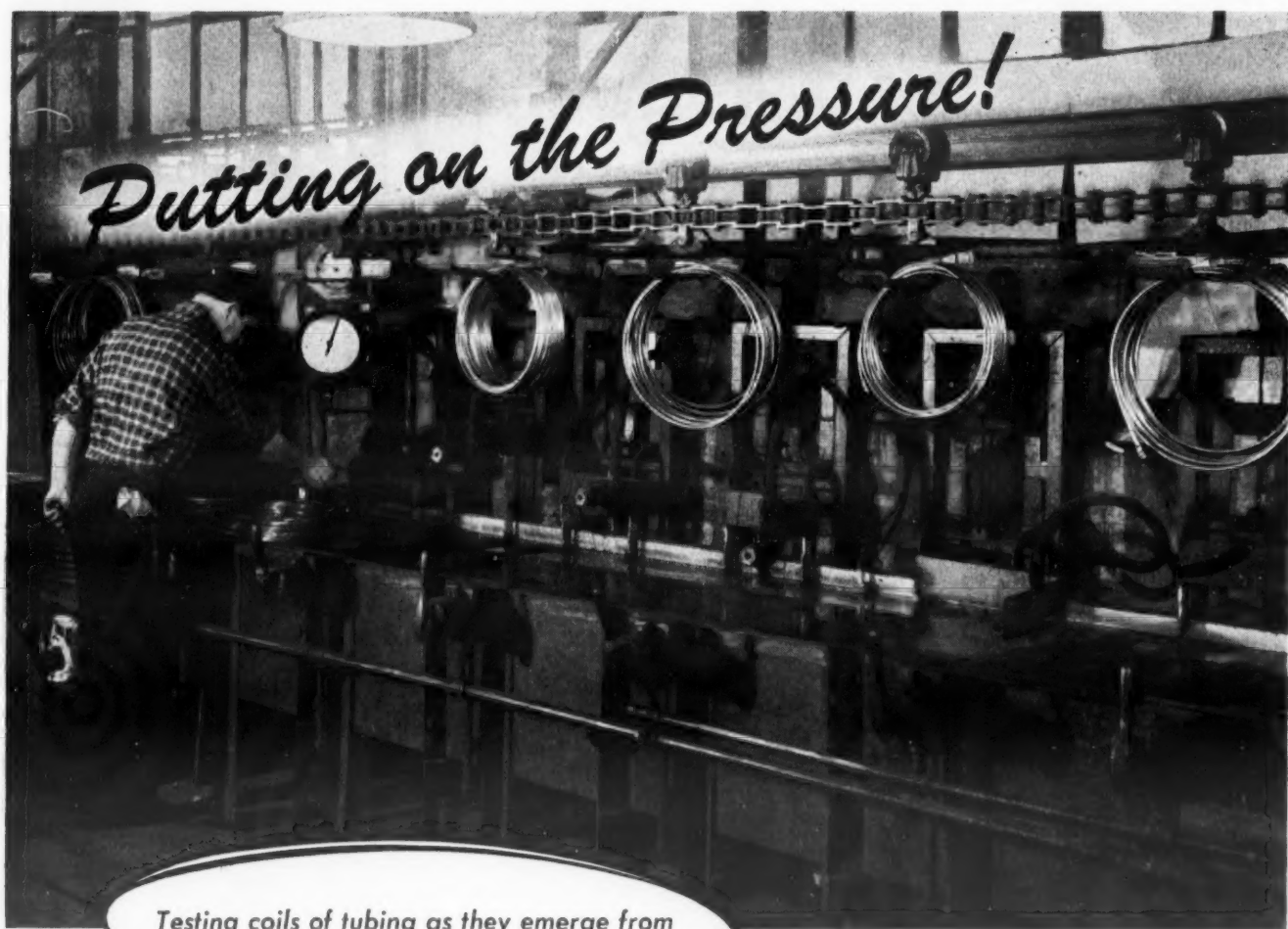
The kit also includes a new bellows assembly with about one convolution less than the old one so as to allow for the space taken up by the new steel ring and neoprene gasket.

UNBALANCED STATIONARY BELLOWS SEAL A 'VACUUM' SEAL

The type of seal shown in Fig. 4—the stationary bellows type that is not "balanced," that is, has some exposed effective area—rather favors the refrigerants such as sulphur dioxide, ethyl chloride, and some of the "Freons" that are on a vacuum at the evaporator temperatures customarily employed, for atmospheric pressure tends to seat the nose more tightly the lower the vacuum. This is in contrast to the Rotating Bellows type seal shown in Fig. 7.

In the partially unbalanced, stationary bellows type of seal, of which there are many thousands in use today, the spring pressure is continuous; but when crankcase pressure is high, spring pressure is offset by crankcase pressure.

(Concluded on Page 19, Column 1)



Testing coils of tubing as they emerge from the bright annealing furnace. Each coil is tested at 250 lbs. air pressure under water.

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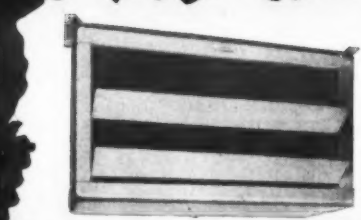


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Compressor Shaft Seal Designs

(Concluded from Page 18, Column 5)

When crankcase pressure is low, the spring pressure is not offset and the spring pushes hard against the seal nose which pushes hard against the shaft, and this tends to push the shaft back out of the main bearing. This would push the connecting rod cranks (or throws as they are sometimes called) out of line with the rods and, in general, throw the internal working parts out of line.

This is corrected by putting some form of thrust bearing in the rear end of the crankcase to take up the heavy spring thrust. One very common type of thrust bearing, shown in Fig. 6, is to put a heavy spring behind the shaft just beyond the rear main bearing, and between the spring and shaft to put a steel ball. Ring type thrust bearings such as shown in Fig. 8 are used, especially with the rotating bellows type seal. Ball bearing thrusts are also used.

Another type of seal shown in Figs. 7 and 8, known as the rotating bellows type and used very successfully by some manufacturers, has the bellows and nose attached to the shaft shoulder with a gasket and consequently the bellows and nose assembly rotate with the shaft. The nose bears on a stationary steel seal ring gasketed to the crankcase

around the shaft. The crankcase pressure within the bellows tends to expand the bellows and to push the nose against the seal ring; atmospheric pressure outside the bellows tends to push it off.

This type seal can be unbalanced or balanced depending upon the relative diameters of the seal nose and the bellows. The greater the mean diameter of the bellows is in relation to the diameter of the nose, the more unbalanced the seal is and the greater is the pressure of the nose against the seal ring.

But, unlike the stationary bellows type, if there is an unbalanced effective area as shown in Fig. 7 (not a balanced as shown in Fig. 8), the effect of rising crankcase pressure, such as during shut-down periods, is to push the nose against the seal ring more tightly and when the crankcase pressure comes back down, the seating effect and consequently the friction become less.

If the crankcase goes on a vacuum, unseating effect of atmospheric pressure becomes greater than the seating effect of crankcase pressure, so a light spring must be used to compensate for the 14.7 p.s.i. absolute atmospheric pressure. No spring would be required if crankcase pressures were to be always above 0 p.s.i. gauge.

This type seal, if unbalanced, favors those refrigerants such as methyl chloride, "Freon-12," and "Freon-22," that show pressures above atmospheric for normal evaporator temperatures.

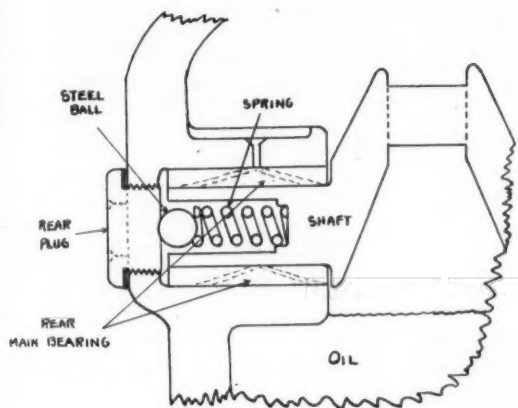
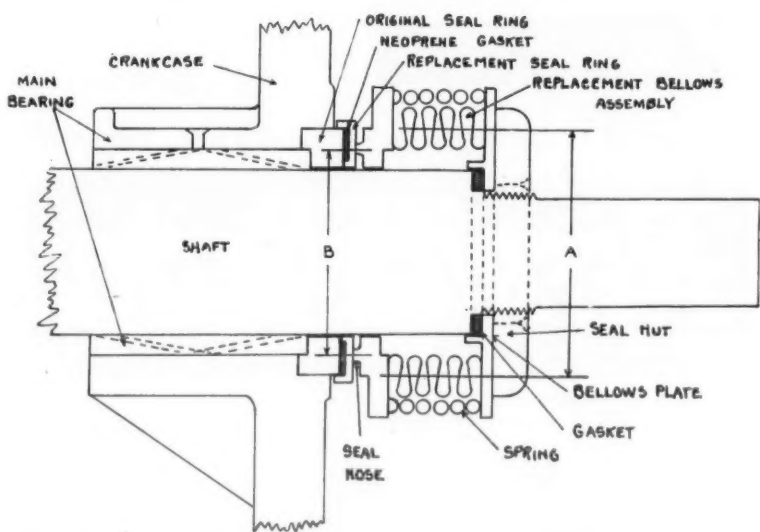


Fig. 6
Shaft Thrust

Fig. 7-Bellows Seal With Replacement Rotating Bellows and Seal Ring



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If, as sometimes occurs, the rotating type bellows seal is designed with the seal ring pressed into the crankcase, and if it is an eccentric type compressor and no bearing plate is used, the seal ring is not replaceable in the field. This has

been taken care of by furnishing a replacement seal ring and neoprene gasket that slip on over the shaft and are held tightly against the old seal ring by the force exerted by the bellows and spring.

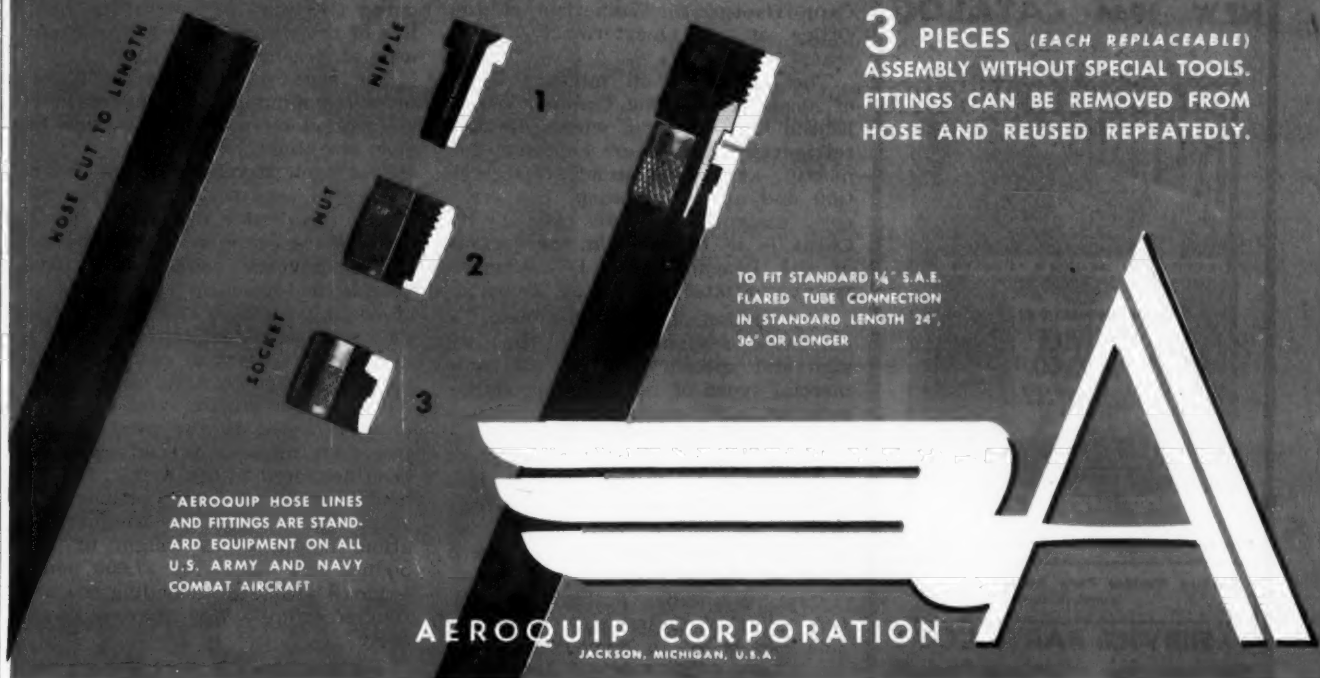
The bellows assembly must also be

replaced for it must be somewhat shorter to allow for the space taken up by the replacement seal ring and seal ring gasket.

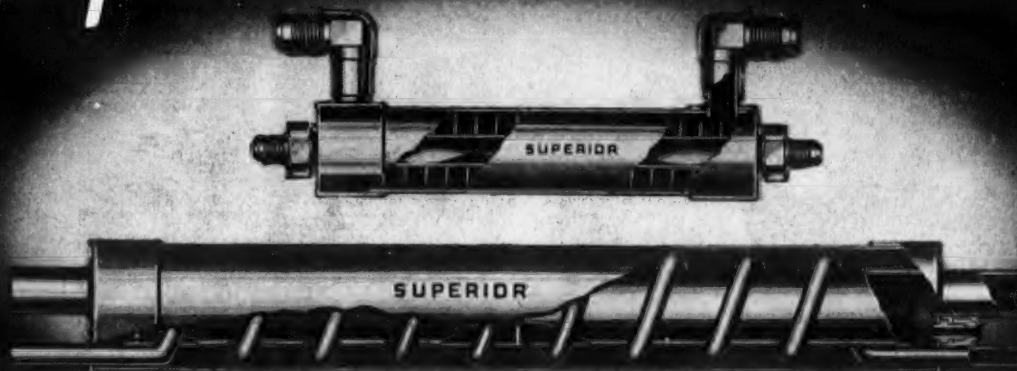
Fig. 7 shows such a seal, with the replacement bellows and seal ring in place.

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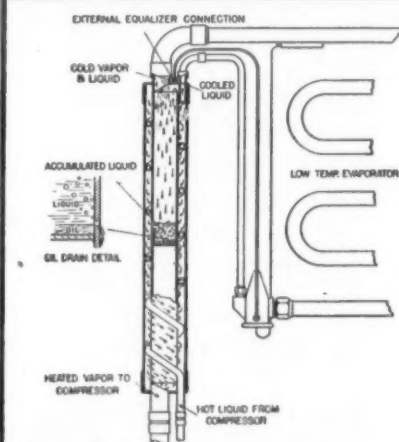
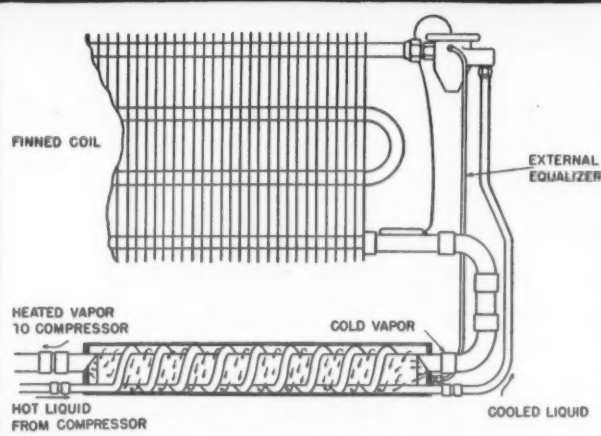
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Refrigerators for Army Must Be Tough To Withstand Rough Handling by GI's

WASHINGTON, D. C.—Problems of "Refrigeration for the Army," and "Air Conditioning of Railroad Cars" were the topics of the program presented before the October meeting of the Baltimore-Washington Section, A.S.R.E., held here.

"Technical Angles in Connection with Army Refrigeration" was the subject of the paper presented by Capt. George D. Wetherbee of the Office of the Quartermaster General.

The author is on military leave of absence from the Commonwealth Edison Co., Chicago, where he was refrigeration engineer, handling domestic and commercial refrigeration and air conditioning. His present assignment with the Q. M. Corps is in the Mechanical Section of the Research and Development Branch, Military Planning Division.

His section, the speaker said, is currently responsible for the design and specifications of all commercial types of refrigeration equipment for Army posts, camps, and stations within the United States. It is also responsible for all portable and mobile types in the various Theaters of Operation. The work covers refrigeration equipment that does not yet exist or which has not yet been standardized by the Army.

Capt. Wetherbee praised the attitude of private industry which he said has shown a wholehearted desire to assist the Army in developing new and better types of equipment

which will assist our soldiers in the field.

After an item has been developed, it is subjected to a practical test under actual field conditions by the Quartermaster Board at Camp Lee, Va., which often discovers that features which looked well on paper are utterly impractical. Frequently, accurate technical information is secured through the laboratory facilities of the National Bureau of Standards at Washington.

The speaker proceeded to discuss briefly a number of problems in refrigeration on which his section has been working.

One such development is the refrigerated semi-trailer. The current trailer, invaluable in the distribution of produce, weighs 14,700 pounds, has a payload capacity of 10,000 pounds, is top heavy and the weight of cooling surfaces requires substantial superstructure, galvanized iron interior is subject to rust, and wood racks are hard to keep clean.

Discussions with a number of manufacturers led to the production of two pilot models, one of which has been delivered to the Army. The new model is constructed primarily of aluminum with a light weight insulation, has a gross weight of 7,100 pounds and can carry 17,600 pounds payload without overloading the tires, thus effecting a 75% increase in capacity.

Furthermore, it was driven fully loaded with fresh meat from a

Northwestern city to Camp Lee, Virginia, affording a considerable amount of field test data en-route.

Inasmuch as frozen beef possesses an inherent substantial refrigerating capacity, the idea of using an insulated non-refrigerated shipping container was developed. Very little accurate data was available and the task of obtaining such data was undertaken by the Chicago Laboratory.

Models of several different types are being developed for test, one will be sectional for disassembling and reuse, and one is of the expendable type.

Discussing the technical requirements of Army refrigerators, Capt. Wetherbee stressed the fact that they must be ruggedly designed and be able to withstand rough usage. Soldiers do not have the pride of ownership which exists in the civilian field and the soldiers do not have to pay for them. Experience shows that when soldiers handle portable refrigerators they are not treated as carefully as a commercial item being delivered to a place of business.

Army refrigerators must be designed for sanitation, said the speaker, because of the extremely high standards demanded by the Medical Corps. In many instances, these requirements are higher than those of the most critical civilian Health Department.

Army refrigerators must also be designed for careless and uneconomical usage such as leaving the door open for protracted periods. This was found to be especially true in the case of walk-in refrigerators used in Army camps.

The condensing units and evaporators furnished with most of the walk-in coolers supplied in the early days of the War were found to be much too small although they had

ample capacity for the most severe civilian use. Educational programs were instituted but it was finally found necessary to specify larger equipment in most instances.

Weight of portable and mobile equipment must be maintained at a minimum insofar as it is consistent with rugged construction. The Army is lacking in small refrigeration units for use in combat zones. Such refrigerators must be loaded onto trucks and unloaded from trucks frequently. In order to accomplish this, they cannot be too heavy. Weight is also important in connection with transportation by air.

Railroad Conditioning Presents Many Problems

"Air Conditioning of Railroad Cars" was discussed by J. A. Bucy, Supervisor, Car Lighting, Baltimore and Ohio Railroad, who told of the early history of this application including some of the difficulties encountered.

The B & O, said the speaker, began experimenting in 1884 using a large ice box mounted on the bow of a car which was equipped with ducts so located as to catch the breeze and carry it over the ice and back into the car when it was in motion.

In 1906 a diner was equipped with another type of ice cooling system and operated in service from Philadelphia to Chicago. It cooled, but the stops were too frequent and the cost was too great to be practical.

Another type was installed in 1925 but required more current than could be supplied from the generators on the cars.

Further experiments were made during the period 1929-31 using ammonia and methyl chloride, which proved that air conditioning of trains was practical, though many troubles developed.

Mr. Bucy stated that on May 24, 1931, the "B & O Columbian" began operating between New York and Chicago as the first completely air conditioned train in history. Power was furnished by gasoline engine-driven compressors using ammonia as the refrigerant.

In the following year, the "National Limited," operating between New York and St. Louis, equipped with "Freon" compressors, became the first all-sleeping car, long-distance train to be air conditioned.

The importance of keeping the weight down to a minimum and at the same time having sufficient power to do the job was emphasized by the speaker who recalled that locomotive engineers had complained to him that cutting in the air conditioning on a train was equivalent

(Concluded on Page 21)

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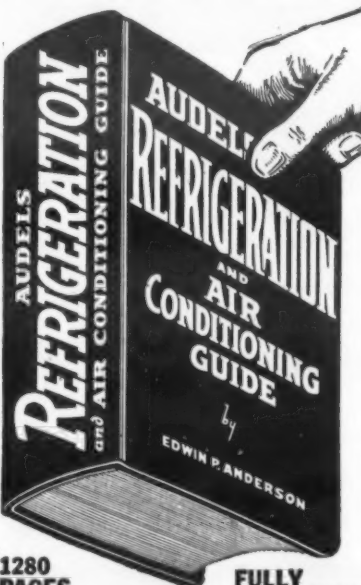
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Problems of Railroad Conditioning Cited

(Concluded from Page 20, Column 5)

to adding one or two cars for the engine to pull.

Power is generally supplied from one 4-KW and one 7½-KW, 38 volt axle-driven generators which charge 32 volt, 1,000-ampere-hour storage batteries, with voltage regulators, which in turn supply current to the 2-cylinder vertical and 3-cylinder radial compressors.

Two types of condensing equipment are used, said Mr. Bucy. Water cooled condensers with fans, pump and water sprays, and new type of air cooled condensers with fine mist water sprays that cut in when head pressure reaches 140 lbs. and fans to pull air over the coils. Overhead and floor type dry coil units are located in one end of the car.

A static duct is used from the dry coil to opposite end of the car on the ceiling, insulated with ½-inch cork between duct and ceiling, and one-inch cork on top of ceiling.

This duct has pick ups and louvers to distribute the air. Later equipment has continuous perforations along the sides of the ducts to distribute the air more evenly.

The fresh air intake is in the vestibule, with a manual shut off to close when going through tunnels.

Railroad requirements are much more severe than are commercial. Each car must have its own power plant and water reservoir. Provision must be made to guard against cinders and soot, vibration of piping, changing sun load, etc.

Arizona Refrigeration Men Plan Meeting

(Concluded from Page 1, Column 2)

Arthur B. Lewis, Member American Society of Refrigerating Engineers, "Romance of Refrigeration in the South Pacific"; Arthur J. Hess, past president, A.S.H.V.E., So. California chapter, "Air Conditioning Application of Refrigeration."

Mr. Lewis declared that in the past three years the refrigeration industry has achieved the equivalent of perhaps 25 years of normal progress. It has solved for the army a multitude of problems in food protection ranging from equatorial to arctic conditions. It has contributed to the instruction of natives of Africa, India, and South Pacific in the habit of eating ice cream. "They will be our future customers," he said. Thousands of new applications of refrigeration have been developed during the war, he pointed out as a result of his opportunities for observation while serving with the war department in the Pacific.

A. F. Morairy, vice president, Central Arizona Light & Power Co., and chairman of the state Committee for Economic Development, reported that as a potential market for refrigeration, Arizona rates far ahead of the national average.

Officers and directors of the association for the current year, who serve up to the date of the annual election next January, are:

Roy L. Perry, 815 E. Van Buren, Phoenix, president; E. McLaughlin, 27 South 4th Ave., Phoenix, vice president; W. C. Miessemer, 231 South Central Ave., Phoenix, secretary-treasurer; J. L. Lawson, 516 West Washington St., Phoenix and Walter Haake, 1755 West Van Buren St., Phoenix, directors.

The membership roster of the Association includes the following active members:

Ace-Lance Refrigeration Co., Arizona Dairy Equipment Co., Arizona Engineering Co., Bishop Refrigeration Service, Byler Refrigeration Service, Central Arizona Light & Power Co., Contreras Bros. Refrigeration Co., Coolidge Electric Co., Coolidge; Dorris-Heyman Furniture Co., Electrical Equipment Co., Evans Refrigeration Service, Fannin's Gas & Equipment Co., General Service Co., Tucson; Glover & Clark Engineering Co., Tucson.

Grabe Electric Co., Tucson; Hines Refrigeration Services, Mesa; Hobart-McCray Agency, Tucson; Karlson Machine Works, Lawson Refrigeration Co., Matson Refrigeration Co., Wickenburg; Mehagian Home Furnishing Co., Mills Refrigeration Service, Ajo; Mission Dairy Co., Momsen-Dunnegan-Ryan Co.

New State Electric Co., Peel Refrigeration Service, Perry's Refrigeration Service, Putnam Refrigeration Service, Roy L. Perry, Samuels Distributing Co., Shaw Electric Appliance Co., Sizemore Refrigeration Service, Stadner Refrigeration Co., Tidmarsh Engineering Co., Tucson; Tucson Machine & Engineering Co., Tucson; Wang Refrigeration Service, Coolidge; J. Carl White Co.

mittee), "Trends in Store Modernization and Planning," "Place of Visual Merchandising in Modernization."

Thursday afternoon: "Postwar Customer Relations," "Postwar Purchasing Power," "The Need for

Public Relations in Your Store," "Advertising—Its Place in Your Planning," "Re-Appraisal of Store Services."

Group sessions will include: Merchandising and Ready-to-Wear; Store Management, Personnel and De-

livery Groups; Sales Promotion and Display; Credit and Control; Smaller Store Division; a Joint Meeting of Personnel and Sales Promotion on "Better Selling"; Distributive Education, and a full day's session on "Television."

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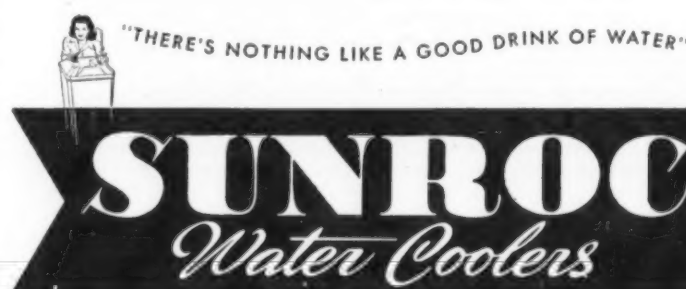
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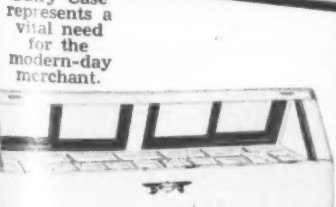
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NRDGA Plans 7 Sessions For N. Y. C. Meeting

(Concluded from Page 1, Column 3)

by short talks on the "Outlook for Postwar Taxation," "Social Security, Centralized or State Administered," and "Wartime Controls."

Tuesday evening: "How Can the Smaller Store Meet Its Competition?" with special addresses on "Promotion Techniques," and under Merchandising—"Is Central Buying the Answer?" and for Accounting "What Controls Are Essential to Insure Effective Store Operation?"

Wednesday morning: "Jobs In Retailing" with sub-titles on "Retailers' Part in Re-Employment of Veterans," "Rebuilding Personnel Staffs to Peacetime Status," "Job Analysis and Evaluation," and "Attracting Better People to Retailing."

Wednesday afternoon: "Selling—The Key to 55,000,000 Jobs!" "Will Distribution Be the Postwar Bottleneck?" "Gearing Store Operations to Better Selling," "Personnel—Viewed As An Investment, Not An Expense."

Thursday morning: "Postwar Modernization," "Results of NRDGA Survey" (by the Chairman of the Association's Postwar Planning Com-

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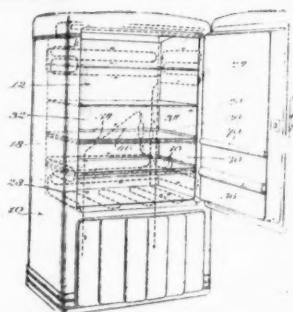
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PATENTS

Weeks of Nov. 28 & Dec. 5

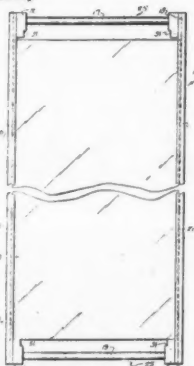
2,363,530. **REFRIGERATOR.** George K. Iwashita, Indianapolis, Ind., assignor to Stewart-Warner Corp., Chicago, Ill., a corporation of Virginia. Application Sept. 29, 1942, Serial No. 460,099. 3 Claims. (Cl. 62-89.)



1. In a refrigerator, a cabinet providing a food space, a sheet metal liner for said food space, an impervious shelf dividing said food space into separate zones, said shelf being comprised of a plurality of spaced apart glass sheets, shelf supporting means formed of material of low heat conductivity arranged to engage the edges of said sheet interrupted mechanically to form a slot, means connecting the edges of said liner on each side of said slot to said supporting means, the portions of the liner on opposite sides of said slot thus being isolated thermally from each other but mechanically connected, a refrigerator coil located upon and in heat conducting relation to said liner, said coil being disposed upon one surface of said liner, partially upon one side of said slot and partially upon the other side of said slot, a door for said refrigerator, and means associated with said door adapted to seal the space between said glass sheets at the fourth edges of said sheets and to seal one of said zones from the other when said door is closed.

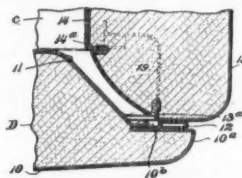
2,363,578. **CONTRACTOR UNIT FOR AIR CONDITIONING SYSTEMS.** Walter

G. Dieter, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Co., Toledo, Ohio, a corporation of Ohio. Application April 7, 1943, Serial No. 482,131. 12 Claims. (Cl. 261-112.)



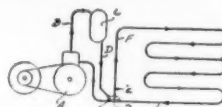
1. In an air conditioning system, a contractor unit comprising a plurality of spaced contactor plates and a frame extending around and parallel with the edges of said plates for supporting and retaining the same adjacent their edges and providing a substantially uninterrupted contactor surface on both faces of each of the contactor plates, said frame being open on two sides to permit free passage of air and liquid into and out of contact with two edges of each contactor plate.

2,363,591. **REFRIGERATOR CABINET CONSTRUCTION.** Wallace Ray Howard, Connersville, Ind., assignor to Rex Mfg. Co., Inc., Connersville, Ind. Application June 17, 1940, Serial No. 341,040. 1 Claim. (Cl. 220-9.)



A cabinet construction comprising spaced apart walls having their marginal edges flanged to extend toward each other and converging inwardly with respect to each other, means for supporting said walls in fixed position and a breaker strip having a flexible main body portion provided with slots along the longitudinal edges thereof, said breaker strip being tensioned in an arc to permit the edges of the flanges to be inserted into the slots of said breaker strip and said breaker strip when so attached to the flanges remaining in a state of tension in an arc and projecting outwardly from said flanges.

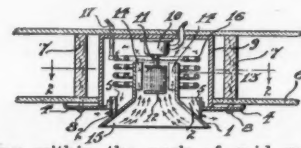
2,363,705. **REFRIGERATING MECHANISM.** Parke H. Thompson, Glendale, Mo. Application Feb. 28, 1942, Serial No. 432,755. 7 Claims. (Cl. 62-8.)



7. In combination with a refrigerating system including an evaporator, a suction line, and means for supplying refrigerant to the evaporator, a control valve having a chamber and mounting means for holding the chamber on the suction line in position to be effected by temperature changes in the latter, said chamber having a relatively large area in one plane and a relatively small area in a plane transverse to the plane of the large area and being partially filled with a volatile liquid having a component in gaseous phase and a component in liquid phase, the liquid being of such character that the ratio of said components varies with slight changes in temperature, said chamber being so mounted on the suction line that the plane of the large area makes a selected angle with the horizontal, such angularity of mounting determining the degree of sensitivity, and said mounting means being adapted to permit angular adjustment of the valve in relation to the suction line.

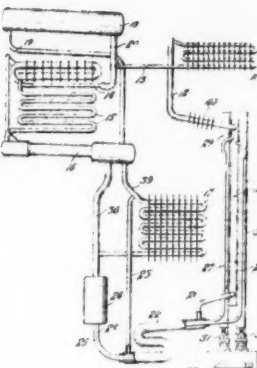
2,363,839. **UNIT TYPE AIR CONDITIONING REGISTER.** Charles Demuth, Jamaica, N. Y. Application Feb. 5, 1941, Serial No. 377,414. 4 Claims. (Cl. 96-33.)

1. In an air conditioning and distributing unit, the combination of a housing having a top wall and downwardly extending peripheral side walls providing an air tempering chamber open at its lower end, conduit means centrally disposed within said housing and providing a passage of general funnel shape having a neck and a mouth, the neck of said passage being in communication with said chamber and directed toward its top and the mouth of said passage being disposed below the open end of said chamber, the lower end of said conduit means having an outwardly and downwardly flaring wall providing with the lower portion of said chamber wall an emission nozzle, and a centrifugal fan mounted on an axis ex-



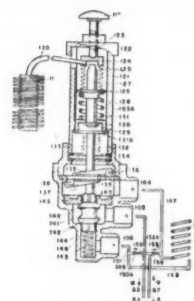
tending within the neck of said passage substantially coaxial therewith to draw air into the mouth thereof and pass it from said passage neck through said chamber and discharge it through said nozzle.

2,363,771. **REFRIGERATION.** Harry Karl Bergholm, Stockholm, Sweden. Application Feb. 24, 1944, Serial No. 523,641. In Sweden Jan. 14, 1943. 7 Claims. (Cl. 62-119.5.)



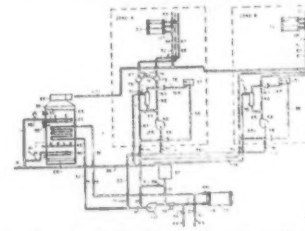
1. A generator for an absorption refrigeration system comprising a single generator vessel, means for supplying liquid to the vessel, means for discharging liquid from the vessel, separate means for conducting vapor from the vessel, a plurality of flues arranged in heat conducting relationship with said vessel, and a separate source of heat from each flue whereby the heat is transmitted from the flues to the vessel to heat the liquid therein.

2,363,944. **AIR CONDITIONING SYSTEM CONTROL ARRANGEMENT.** Willis H. Carrier, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Original application Aug. 12, 1939, Serial No. 289,749. Divided and this application July 7, 1942, Serial No. 450,052. 6 Claims. (Cl. 257-3.)



3. In a fluid control arrangement of the character described, a first conditioning medium line, a second conditioning medium line, means for routing heating conditioning medium through said lines under winter operating conditions and cooling conditioning medium through said lines under summer operating conditions, a heat exchanger connected to said lines, a proportioning valve structure, a multi-seat valve in the structure, a first fluid port, a second port, a third port, all said ports connecting said lines to passages controlled by said valve, and means operative responsive to variations in atmospheric conditions during certain seasons of the year for routing heating conditioning medium from one of said lines in a desired ratio with one part flowing through said heat exchanger and two of said ports and the remainder of the medium flowing through one of said last two mentioned ports and the third port, the ratio being varied responsive to variations in the position of said valve, said means being operative responsive to variations in atmospheric conditions during other seasons of the year for routing cooling conditioning medium in a different flow arrangement through the same ports and exchanger.

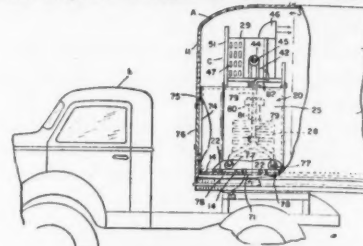
2,363,945. **AIR CONDITIONING SYSTEM.** Willis H. Carrier, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Original application Aug. 12, 1939, Serial No. 289,749. Divided and this application July 7, 1942, Serial No. 450,054. 8 Claims. (Cl. 257-3.)



4. In combination, a plurality of air conditioning units, a fluid circuit for supplying conditioning medium to and returning conditioning medium from said units, said fluid circuit comprising a first common conduit serving said units, a second common conduit serving said units, and an impeller device, means for delivering conditioning medium discharged by said impeller to said units through said first common conduit under predetermined operating conditions, and for returning conditioning medium from said units through said second common conduit under said predetermined operating conditions, and means for delivering conditioning medium discharged from said impeller to said units through said second common conduit under other predetermined operating conditions, whereby under said different operating conditions, conditioning medium is circulated in different directions through said first and second common conduits.

2,363,974. **MOUNTING FOR REFRIGERATING APPARATUS AND THE LIKE.**

Henry O. Kirkpatrick, Detroit, Mich., assignor, by mesne assignments, to Advance Mfg. Inc., Detroit, Mich., a corporation of Michigan. Application Aug. 2, 1943, Serial No. 497,076. 17 Claims. (Cl. 62-129.)



1. Air conditioning apparatus for a closed cargo carrying vehicle comprising a self-contained portable unit adapted to be completely installed within a vehicle of the type mentioned and having a housing provided with a bottom wall adapted to rest upon a bottom wall of the vehicle, said housing having openings in its bottom wall, wheeled supports for the unit adapted to be projected through said openings into operative engagement with the bottom wall of the vehicle, and means adjustable relative to the housing for projecting said supports through said openings into operative engagement with the bottom wall of the vehicle.

2,364,016. **ICE PLANT OPERATING WITH COMPRESSION AND EVAPORATION.** Reinhard Wussow, Berlin-Charlottenburg, and Fritz Wilhelm Fechner, Hamburg, Germany; vested in the Alien Property Custodian. Application Nov. 27, 1940, Serial No. 387,393. In Germany Nov. 28, 1939. 8 Claims. (Cl. 62-105.)

(Concluded on Page 23, Column 1)

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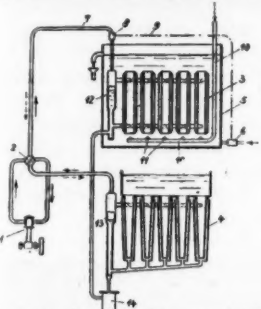
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Patents (Cont.)

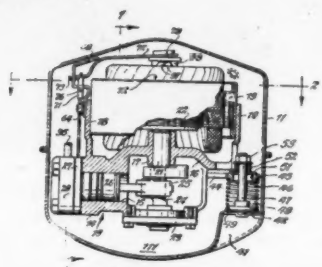
(Concluded from Page 22, Column 5)

1. In a plant for making ice by compressing and evaporating a refrigerant, a condenser comprising, a receptacle for a cooling liquid, double walled condenser tubes in said receptacle defining channels for the flow of the cooling liquid, means for producing streams of cooling liquid through said channels, means for supplying a refrigerant to, and discharging it from, said condenser tubes, means for supplying cooling liquid to and dis-



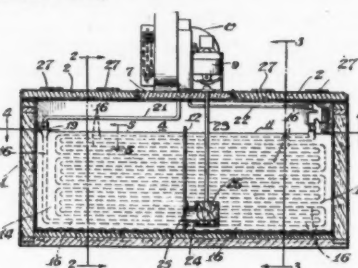
charging it from, said receptacle and for maintaining the surface of the cooling liquid above said cooling tubes, said last named means comprising a supply pipe with built-in regulating valve opening into the receptacle below the condenser

2,364,033. **HERMETIC REFRIGERATION COMPRESSOR.** Jans Touborg, Tecumseh, Mich. Application Dec. 6, 1941, Serial No. 421,986. 7 Claims. (Cl. 230-29.)



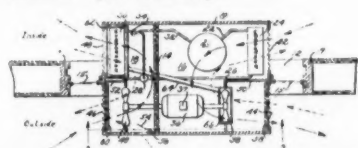
1. In a refrigeration compressor comprising a casting member having a cylinder bore and a piston, a motor mounted above the cylinder and operatively connected to the piston, a bracket mounted on the casting and extending upwardly thereof, a lever pivotally connected to the bracket at one end and overhanging the motor at its opposite end, whereby, due to the moment of the lever, it tends to drop on its pivot, centrifugal control means connected to the rotor of the motor, said control means, when the motor is below predetermined speed, contacting and elevating said lever, said means, when

2,364,154. **MILK COOLER.** Richard Markley, Jr., Smyrna, Del., assignor to Wilson Cabinet Co., Smyrna, Del., a partnership, comprising John E. Wilson, Jr., and Bertha M. Wilson. Application Oct. 22, 1942, Serial No. 462,976. 6 Claims. (Cl. 62-101.)



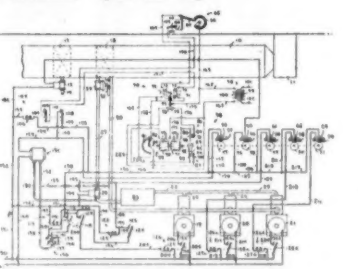
1. In a milk cooler, a cabinet forming a container for a liquid cooling medium, a plate extending between two opposite walls of the cabinet and in proximity to a third wall and dividing the interior of the cabinet into two chambers of which one embraces a major part of said interior; said plate being adapted to constitute an evaporator unit of a refrigerating system, a second partition of greater height than and extending transversely of the first and dividing the last named chamber into two compartments, and means for building up the liquid level in one of the compartments at the expense of the level in the other and to an extent causing overflow of the first partition.

2,364,287. **REFRIGERATING APPARATUS.** Richard E. Gould, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application July 25, 1941, Serial No. 404,060. 7 Claims. (Cl. 62-129.)



1. An all fresh-air conditioning unit of the window sill type comprising in combination, a casing adapted to be mounted on a window sill of a room to be conditioned, means for dividing said casing into an evaporator compartment and a condenser compartment, said condenser compartment having an opening communicating with said room and an opening communicating with the outside, said evaporator compartment having an opening communicating with the outside and an opening communicating with said room, a refrigerating system including an evaporator in said evaporator compartment and a condenser in said condenser compartment, blower means for normally flowing air only over said condenser to the outside, a second blower means for normally flowing fresh air only over said evaporator and into said room, said evaporator blower means having a greater capacity than said condenser blower means, means for reversing the direction of rotation of both of said blower means, and means for admitting outside air to the evaporator compartment when said blower means are operating in reverse.

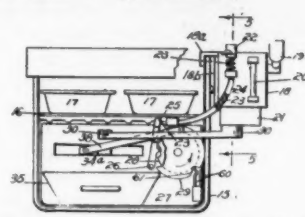
2,364,459. **CONTROL OF REFRIGERATION APPARATUS.** William L. McGrath, Philadelphia, Pa., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Oct. 25, 1941, Serial No. 416,530. 16 Claims. (Cl. 62-4.)



15. In a refrigerating system comprising in combination, a refrigerant translating device, a condenser, evaporator means, said translating device, when operating, causing refrigerant flow through said condenser to said evaporator means, suction means connecting the outlet of said evaporator means to the inlet of said translating device, means responsive to a condition of a medium being treated by said evaporator means for starting the translating device, valve means controlling the flow of refrigerant from said condenser to said evaporator means, said valve means being capable of stopping all flow from said condenser, said condition responsive means being arranged to con-

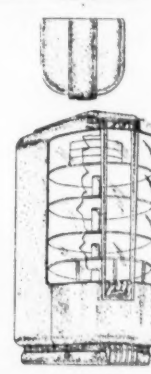
trol said valve means to stop all refrigerant flow from said condenser upon the condition responsive means becoming satisfied, and means responsive to suction pressure arranged to cause continued operation of the translating device after said condition responsive means is satisfied until a predetermined suction pressure is reached.

2,364,559. **ICE-PRODUCING MECHANISM.** Richard M. Storer, Denver, Col. Application July 22, 1941, Serial No. 403,524. 28 Claims. (Cl. 62-105.)



1. Apparatus of the character disclosed comprising a tray for liquid to be frozen, means for introducing a predetermined amount of liquid into the tray, means within the tray for removing ice therefrom, and means actuated by expansion of the liquid being frozen in the tray for initiating operation of said liquid-introducing means and said ice-removal means.

139,533. **DESIGN FOR A REFRIGERATOR.** George W. Walker, Pleasant Ridge, Mich., assignor to Bohn Aluminum & Brass Corp., Detroit, Mich., a corporation. Application Sept. 1, 1943, Serial No. 111,043. Term of patent 3 1/2 years. (Cl. D67-3.)



The ornamental design for a refrigerator, substantially as shown and described.

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250 FRIGIDAIRE model "N," "W350," "W233," and "C." All with 110-220 V. 60 cycle. REP. IND. Motors. Remanufactured ice cream cabinets. Send for list and price. EDISON COOLING CORP., 310 E. 149 St., New York 51, N. Y.

ICE REFRIGERATED bottle coolers. Three-case capacity. Streamlined. All steel, heavily insulated. Casters. Also, for cooling fish, storing cracked ice, etc. Suitable for homes. \$19.00 net. F.O.B. Philadelphia, New. No Priority. Streamlined. 100 bottle capacity size, \$36.50 net. Convertible for mechanical operation. GENERAL REFRIGERATOR COMPANY, 5400 Eadom Street, Philadelphia 37, Pa.

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REFRIGERATION ENGINEER wanted by one of the leading refrigeration unit manufacturers with exceptional opportunity present and postwar. Must be able to do refrigeration laboratory work on commercial, open and sealed, condensing units and household cabinets. This position affords rapid advancement depending upon ability. Box 1656, Air Conditioning & Refrigeration News.

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REFRIGERATION ENGINEER with design experience on small control units. Pleasing personality. Capable of discussing control problems with customers and carrying through on design to meet their requirements. Box 1648, Air Conditioning & Refrigeration News.

GENERAL ELECTRIC commercial refrigeration distributor, near New York City has need for service manager and service repair men. Excellent opportunity for experienced men. Positions permanent. State experience and salary desired. Box 1647, Air Conditioning & Refrigeration News.

EXPERIENCED PARTS MAN take complete charge large refrigeration stock room. Required to supervise employees in department, do purchasing, maintain records, and controls. Rapidly growing department long established refrigeration concern needs man with ability and foresight. Located Chicago. Give full details experience, age, family status. Box 1650, Air Conditioning & Refrigeration News.

CHIEF ENGINEER: Permanent position for experienced refrigeration engineer. Includes all phases of refrigeration application. Must be qualified to assume full responsibility of this interesting and important department. We are manufacturers of display and storage refrigerators; also, freezers and beverage coolers. State qualifications and salary expected. SHERER-GILLET COMPANY, Marshall, Michigan.

SALESMEN and counter men, experienced. West Coast refrigeration supply jobber. Permanent with postwar future. Salary open. Box 1645, Air Conditioning & Refrigeration News.

PERMANENT POSITION for capable, energetic, experienced commercial refrigeration and air conditioning service man with aggressive, well established firm in Rocky Mountain area, handling Frigidaire service and sales on Commercial, Apartment House, and Air Conditioning. Attractive wages. Applications should be complete as to experience and training. Box 1638, Air Conditioning & Refrigeration News.

REFRIGERATION DESIGN engineer! Opportunity in modern plant, building Home Freezers and Commercial Refrigeration equipment. Will be assistant to plant superintendent and handle experimental work on new equipment and improvements in present line. Good living conditions. Write, REFRIGERATION DIVISION, AMANA SOCIETY, Amana, Iowa.

POSITIONS WANTED

MANUFACTURER'S REPRESENTATIVE. Commercial refrigeration application engineer, nine years with one company. Experience as commercial manager, contacting dealers and distributors and direct selling. Would travel out of New York office and represent manufacturer exclusively or sideline. Can finance self and carry stock if necessary. Box 1641, Air Conditioning & Refrigeration News.

SERVICE AND installation manager. Sixteen years refrigeration, air conditioning, heating, and electrical experience, including service, sales, engineering, supervision, and training of service men. Presently employed as Field Service Representative for large manufacturer of refrigeration, air conditioning, and heating equipment. Prefer position vicinity St. Louis or Memphis. Box 1649, Air Conditioning & Refrigeration News.

FRANCHISES WANTED

NEW ORLEANS, Louisiana. Old established refrigeration firm wants distributorship for walk-in coolers, display cases, milk coolers, and other suitable items. Reply to Box 1648, Air Conditioning & Refrigeration News.

WE WISH to establish contact with men in various cities to act in the capacity of brokers for us in purchasing new and used refrigerating equipment, parts, cabinets, and allied electrical merchandise. Arrangements can be made reciprocal. Communicate with Mr. Shenker, 1250 Riverbed Ave., Cleveland, Ohio. Cherry 8170.

EQUIPMENT WANTED

NEW OR USED Soft Ice Cream Freezer Cabinets wanted preferably Mills or Taylors, reply giving fullest particulars of model, size, price, and make. Box 1654, Air Conditioning & Refrigeration News.

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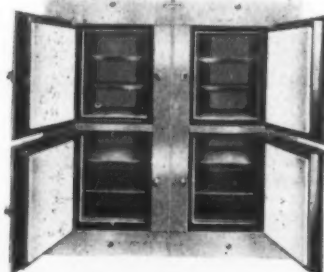
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Wilson ZEROSAFE Reach-In Sectional Model RL-60 for the Storing and Dispensing of Frozen Foods.

McCloud Appointed N.R.S.J.A. Secretary; New Members Named

(Concluded from Page 1, Column 4)
executive secretary," declared Mr. McCombs in making the announcement.

Offices of the executive secretary will be located in Cincinnati, but the exact address has not yet been determined.

New members of the N.R.S.J.A., announced following the recent meeting, are: Associated Refrigeration & Equipment Co., Inc., Sacramento, Calif.; Coleman Electrical Supply Co., Brooklyn; Excel Refrigeration Supplies, Inc., Brooklyn; Foster Supply Co., Buffalo; Graves Brothers Co., Tampa; Percy G. Hansen, Akron; F. C. Lovelock Pty. Ltd., Sydney, Australia; Mason Supply Co., Columbus, Ohio; Refrigeration Parts Co., Milwaukee; and Snell Refrigeration Supply Co., Dallas.

The following companies, who were previously term members, have now become regular members: Authorized Refrigerator Parts Co., St. Louis; Central Supply Co., Indianapolis, Ind.; K. & M. Supply Co., Tulsa, Okla.

New Guide for Buyers Of Surplus Gov't Property Is Issued

WASHINGTON, D. C. — Mason Britton, who has succeeded W. L. Clayton as Surplus War Property Administrator until the recently appointed Surplus Property Board takes office, announced Dec. 26 that a revised edition of the Buyer's Guide for Surplus Property is now available at the Superintendent of Documents, Washington 25, D. C., at a price of 10 cents for each copy.

Mr. Britton emphasized that the Buyer's Guide is not a listing of surplus property now available for sale through disposal agencies. The function of the pamphlet is to show the addresses of the offices disposing of surplus property and the types of property that have been assigned to each agency for disposal. A reference to the Guide will show a prospective buyer where to apply for information regarding what is for sale and the methods of sale. Applications to be placed on mailing lists should be addressed to the offices designated in the Buyer's Guide.

This latest edition of the Buyer's Guide, Mr. Britton said, is essentially the same as Senate Committee Print No. 19, issued in November under the auspices of the Senate Small Business Committee, but includes revisions required by organizational changes.

The Buyer's Guide contains sections devoted to each of the following agencies: Reconstruction Finance Corp., Procurement Division of the Treasury Department, War Food Administration, Foreign Economic Administration, United States Maritime Commission, War and Navy Departments, and Smaller War Plants Corp. The material was prepared by the agencies themselves based upon the present disposal structure. Changes required by such regulations as the Surplus Property Board may issue will be reflected in future editions of the Buyer's Guide.



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Cleveland Electrical League Sponsors Conference on Indoor Climate Program

CLEVELAND—First conference on "controlled indoor climate" to be sponsored by the electrical industry was conducted in Hotel Statler here recently by the Electrical League of Cleveland, with more than 300 members and guests present.

During the afternoon and evening program the conference heard talks on the importance and possibilities of promoting controlled indoor climate by George Boeddener, managing director, National Warm Air Heating and Air Conditioning Association; C. T. Burg, general sales manager of Iron Fireman Mfg. Co.; C. E. Lewis, president of Oil Heat Institute of

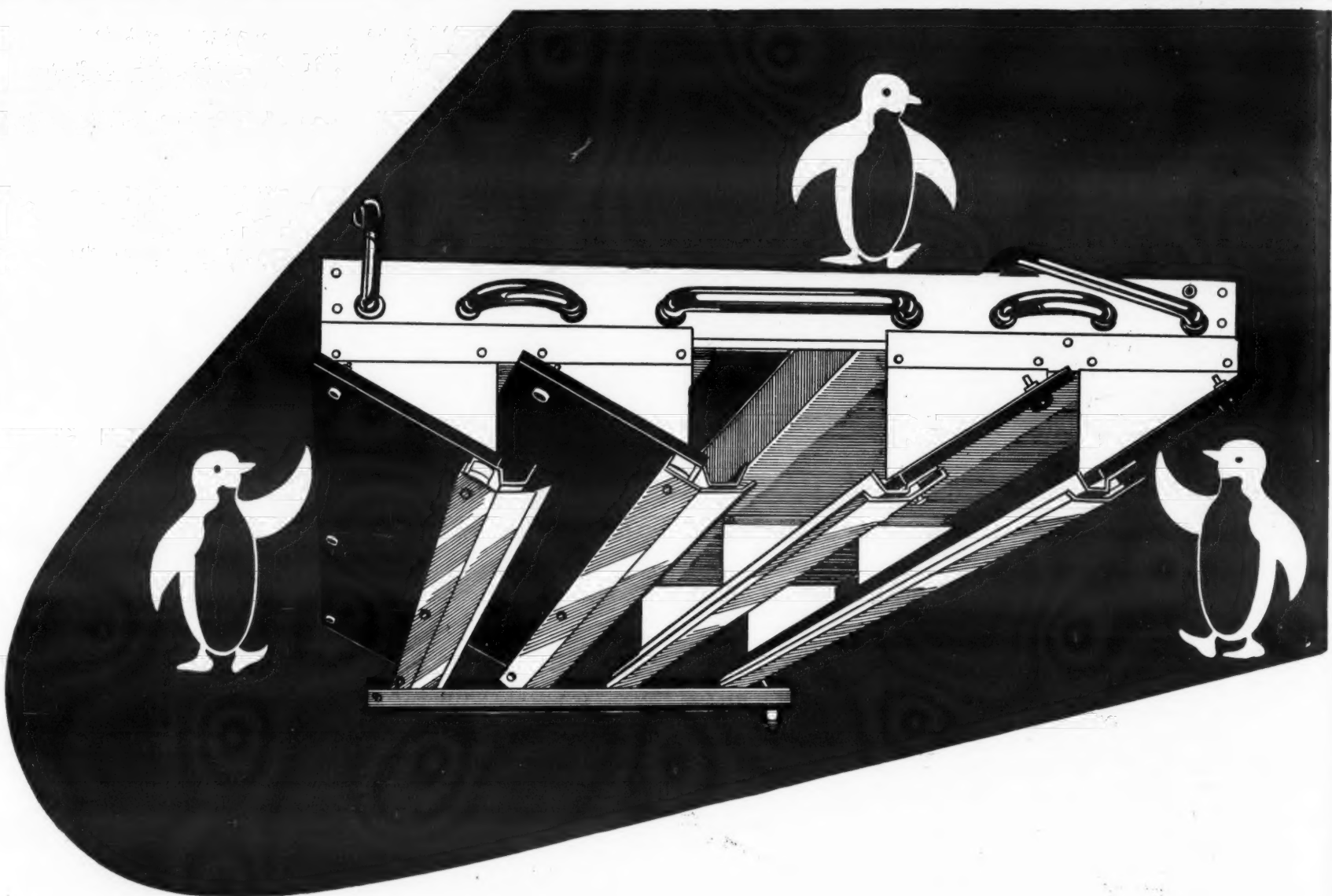
America; W. R. Moore, regional manager of Minneapolis-Honeywell Regulator Co.; and P. B. Zimmerman, president of Indoor Climate Institute and vice president and general sales manager of Airtemp Division, Chrysler Corp.

Speakers stressed the importance of the electrical industry's joining now in the cooperative effort to promote sales of better air conditioning and heating equipment, with emphasis on training dealers, contractors, and installation men.

Jack North, president of the Cleveland league, and W. T. Clark, managing director, presided.



Above are some of the industry leaders who participated in the conference on controlled indoor climate sponsored recently by the Electrical League of Cleveland. They are: W. T. Clark, managing director, the Cleveland league; W. R. Moore, Minneapolis-Honeywell; C. E. Lewis, vice president, Perfex Corp.; P. B. Zimmerman, vice president and general sales manager, Airtemp; Jack North, president, the Cleveland League; George Boeddener, managing director, National Warm Air Heating and Air Conditioning Association; and C. T. Burg, general sales manager, Iron Fireman.



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